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Original Articles.

APPENDICITIS IN CHILDREN.*

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NEW YORK CITY.

The subject of appendicitis has, during the last decade, received so much attention that one might suppose that there was but little more to learn concerning this rather puzzling disease. The term puzzling can certainly be justly employed, at least when speaking of its etiology, for we must frankly confess that our knowledge of this subject is but little further advanced than when the disease was first named appendicitis. We have, of course, learned much about its symptomatology, but even to-day I know of no surgical disease which more often offers surprises to the operating surgeon. The symptoms, or at least our interpretation of the symptoms, do not always indicate the actual condition of the appendix. I need not narrate to you cases where an appendix in a threatening or dangerous state is found when the symptoms have been comparatively trifling. It is this uncertainty which has mainly led surgeons to advise very early operative interference in all cases. No one can certainly tell at the beginning of an attack whether perforation has or has not occurred, or that gangrene of the entire organ will not result in the course of a few hours. Of course, if possible, it is desirable to await the subsidence of the acute attack before removal of the appendix. The experienced surgeon can very often, by careful and frequent observations, safely carry the case along to the quiescent stage. This, however, can not always be done, and it is because of the exceptions that all surgeons are now practically agreed that the best results, both for preservation of life as well as of the strength of the abdominal wall, are obtained if the appendix be removed in the early hours of the attack.

Unfortunately, for many reasons, this practice can not invariably be carried out, and many cases are, and will continue to be, thrust into our hands, which have passed beyond the early stages of the disease. In such cases immediate operation will not always give the best results. There can be no doubt, I think, but that this rule of treatment should be almost absolute, provided that the infection is confined within or to the appendix itself. When, however, the infection has spread beyond, whether through a perforation of its wall or through the transudation of pyogenic bacteria through its inflamed coats, the propriety of advising immediate operation in every case becomes to my mind doubtful. A few years ago it was almost the universal feeling, I think, that the appendix should invariably be removed as soon as possible, no matter what the stage of the disease. Personally, I have always felt that there were many exceptions to this rule, and for a year or two past the drift of surgical opinion has been, I think, toward less radical views on this subject. This drift has become still more pronounced since the treatment formulated by Ochsner has apparently shown that many a life can be saved by judicious delay. While I can not quite agree with Dr. Ochsner in his extreme position, yet I feel very strongly that his teachings on this subject are well grounded, and if followed intelligently, but not blindly, will tend to lessen decidedly the mortality of grave cases of appendicitis. Certainly my own experience during the past year or two has led me to this conclusion, for I feel that in some cases postponement of the operation for some hours has immensely aided the recovery of the patient.

For example: In cases where there has been a sudden perforation with resulting peritoneal shock of extreme degree, the patient is in a very poor condition for a serious operation, and the peritoneum as well is not as resistant against infection as it will be some twelve hours or so later. In such cases, where there is apt to be much abdominal distension, a weak and rapid pulse with symptoms of general shock, the postponement of the operation for twelve or twenty-four hours will often result in a very decided improvement in the patient's condition, provided that starvation be absolute. The abdomen will generally become less distended and the pulse will improve.

You may ask what bearing have these remarks on the title of my paper, "Appendicitis in Children." It is mainly concerning this point of treatment, however, wherein I think the treatment of this disease in children should differ from that among adults.

I do not think that it is properly appreciated, among general practitioners at least, how frequently appendicitis occurs in children. The operating surgeon very often encounters in the course of his operations on young adults the history of attacks of abdominal symptoms dating back to their earlier years, which undoubtedly, arguing from the state of the appendix found at operation, were due to mild attacks of appendicitis. It is often difficult to distinguish cause from effect, and unquestionably in many of these cases the previous abdominal symptoms may have been caused not by appendicitis, but by attacks of catarrhal enteritis, yet, at the same time, there are others whose attacks of indigestion, which have recurred at intervals since early childhood, immediately cease after removal of an appendix, which distinctly shows the results of years of recurring attacks of inflammation. Of course, I appreciate the fact that the surgeon encounters but a minute proportion of the intestinal cases among children, and because

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of the few cases where a later manifestation of appendicitis leads him to attribute the digestive ailment of childhood to that cause, he is, perhaps, apt to overlook the millions of young patients who have manifested similar symptoms, and yet whose appendices have never shown evidence of disease. I am willing to grant all this, but yet one can not avoid the conclusion that appendicitis in children is not an uncommon disease.

SYMPTOMS.

The symptoms on which we most depend for our diagnosis of appendicitis are pain, local tenderness, muscular rigidity, vomiting and abdominal distension. Pulse is often of value, as is also the temperature, but these two symptoms have more significance, perhaps, as regards the severity, rather than the actuality of the disease.

In children, especially those under 10 or 12 years of age, the important symptoms, with the exception of vomiting, are apt to be masked. Of course, the older the child the nearer the disease approaches the adult type.

As my experience increases, I am becoming more and more convinced that appendicitis in young children differs somewhat from the same disease in adults. The difference consists in the obscurity of the diagnostic symptoms, and in the more insidious progress of the disease. The younger the child the greater is the difference. The correct diagnosis of disease in young children is often beset with difficulties. Their inability to locate pain, their general restlessness and fretfulness and the unreliability of the significance of temperature are some of the causes of this difficulty.

Pain.—This, especially at the beginning of the attack, is, as a rule, probably as severe in the child as it is in the adult, but the uncertainty of its location impairs its value as a diagnostic symptom A general pain in the belly is complained of, the child not knowing exactly where it is located, at one moment pointing to the upper, at another to the lower abdomen. It hurts everywhere, apparently not specially in the appendicular region. This symptom, which of itself in the adult is of great significance, can only help us in the case of children by its combination with other symptoms. In certain phlegmatic children there seems to be at times almost complete absence of pain. Tenderness to pressure is apt to be equally doubtful. The child generally dreads any palpation of the abdomen, and complains almost as much in one part as another.

Muscular Rigidity.—This symptom, which is, perhaps, our most important guide in the diagnosis of appendicitis in adults, is in children equally obscure. The child is suffering pain and is prepared to cry out, and unless taken unawares, to tighten its abdominal muscles as soon as or even before the skin is touched by the examiner's finger. The dread of being hurt causes the muscles to act on guard at almost any point of the abdomen. If the utmost gentleness and patience are practiced, along with diversion of the child's attention, sometimes this symptom can be elicited, and if certainly found, the diagnosis is at once confirmed.

Vomiting.—This is in children probably the most persistent symptom. It at least is the most evident. It is apt to continue in spite of starvation and medication. If it does so, and persists for many hours without other adequate reason, and if it be accompanied by severe pain with absence of intestinal movement, the suspicion of appendicitis should be very great. Persisting with severe abdominal pain for twenty-four hours or more, even with intestinal movements, the suspicion is still considerable. The accompaniment of diarrhea is, of course, unusual, and points more toward a gastroenteritis, but still it may occur with appendicitis.

If the abdomen becomes more and more distended the diagnosis of appendicitis becomes more and more probable. Of course, for a perfect picture we should also have either local tenderness or muscular resistance, but, as already stated, these symptoms in children are apt to be wanting.

The history of previous attacks of vomiting without adequate cause is of considerable diagnostic value. The surgeon is, perhaps, apt to lay too much stress on the importance of such "bilious attack," but if he does so it is because very frequently in the cases on which he operates such a history is given. It is important, however, that such attacks should be separated from those due to indiscretions in diet or an overloaded bowel.

The diseases from which, it seems to me, appendicitis in children is especially difficult to differentiate, are gastroenteritis, with the gastric element most predominant, diaphragmatic pleurisy and basal pneumonia. To my mind, certain of these doubtful cases are the most puzzling which the surgeon encounters. In certain cases of acute indigestion or of gastroenteritis in its early stages, the differentiation from appendicitis is not easy. The following points may be of some value: The persistence of vomiting with severe pain for more than twenty-four hours, especially if there be no diarrhea, favors the diagnosis of appendicitis. If the constipation be obstinate, the suspicion of appendicitis is generally sufficiently strong, should there be at the same time any one other symptom of this disease to warrant operation. If there be diarrhea, it generally, though not always, means that the case is at least less urgent.

The existence of high fever probably rather favors gastroenteritis. The blood examination may shed some light on the diagnosis. The differential count is of more value than the mere leucocyte count. There are, however, so many exceptions to the general rule that personally I do not feel much confidence in blood examinations in young children. Judging from a somewhat limited experience with the iodophilia test, it seems to me to offer more promise of valuable information than does either the leucocyte or differential count.

As an example of the difficulties, let me give the following history:

CASE 1.—Girl, aged 4. During her first year there were several attacks of pain, vomiting and fever, lasting a few days and then passing off entirely. In the second and third years these attacks occurred in milder degree. The child was always carefully dieted. In December, 1903, there occurred a sharper attack of pain, but there was no fever, no vomiting and no localization of the pain. Since that time until April, 1904, about once a week the child would complain of a sudden, sharp abdominal pain which would last, however, but a few minutes. It had no apparent connection with her meals and might occur when she was at play or out walking. The digestion was apparently always good, and the child looked well. There was considerable difference of opinion as to the diagnosis. The father, who was a physician, and myself felt, however, that the chances of the cause of the trouble was a chronically inflamed appendix. Accordingly, on April 11, 1904, it was removed. It was found markedly diseased, with the mucous membrane the seat of hemorrhages, and in a condition where perforation was imminent. Since the operation the child has been entirely free from pain.

To some of you it may appear foolish to dwell on the difficulty of differentiating appendicitis from diaphragmatic pleurisy, but it has been my lot to encounter sev-

eral cases where it has been for a time quite impossible to distinguish between these two conditions Within the last few years I have been called on at least half a dozen times to either operate or decide concerning the propriety of operation in such cases. In these half dozen cases time has shown that I have been as often wrong as right in my diagnosis, though, fortunately, in the cases that have proved to be pleurisy or pneumonia, a half day's delay has in every case saved the patient from an unnecessary operation. Let me briefly relate three of these cases:

CASE 2.—Boy, aged 8, who had usually enjoyed good health, was seized on November 5, in the early morning, with severe abdominal pain. He was at once given a dose of castor oil and throughout the day this was followed by two doses of Rochelle salts. Later in the day vomiting began and continued more or less for twenty-four hours. There was some fever and a rapid pulse. The bowels refused to move in spite of enemata, the abdomen began to distend, the pain continued. The family physician called a children's specialist in consultation from New York (the child was in the country), and both were puzzled as to the diagnosis. There was no cough, and no pain was assigned to the chest. The vomiting continued, the abdomen was markedly distended, tender everywhere, and the child looked very ill. Prepared to operate. I saw the child toward midnight, twenty-two hours after the commencement of the attack. It was a question as to diagnosis, the vomiting, absolute constipation, abdominal pain and tenderness made a diagnosis of appendicitis or intestinal obstruction probable. There was a faint sign, however, of irritation of the lower left pleural surfaces, and we decided that a delay of a few hours was advisable. On the following morning the signs of pleurisy with probably a basal pneumonia were well developed. The child made a good though slow recovery.

In this case the entire absence for at least forty hours of any abnormal chest sounds and the severity of the abdominal symptoms seemed markedly to favor intraperitoneal inflammation. Until the abnormal chest sounds developed, diagnosis was impossible. The case was a most puzzling one, and the delay in awaiting the pathognomonic symptoms would probably have caused a fatal termination had the appendix been involved.

I do not feel that I can express views of much value as to the differential points between appendicitis and diaphragmatic pleurisy. Of course, I am now referring to cases where abnormal chest sounds are absent. Perhaps in cases of pleurisy a certain fixation of the lower ribs or stoppage of the respiratory movements at this point may be noticeable. Perhaps also the child is more apt to toss about the bed than he would be apt to do were his appendix inflamed, but even in this latter condition the child is much more apt to be restless than is the adult. If the child be inclined to assume the adult position of rest, on the back with the thigh or thighs drawn up, the chances are in favor of appendicitis; but, as already stated, children often fail to assume this posture. The passive flexion and extension by the surgeon, of the thigh on the abdomen, is in appendicitis, even in children, apt to be more resisted and dreaded than it would be in diaphragmatic pleurisy. Sometimes, but not generally, this symptom is of considerable value.

Of course, if there be a tender spot or muscular rigidity, the diagnosis is easy. If a boardlike condition of the abdomen develops, we may be certain that the case is a very grave one of partial peritonitis

INSIDIOUS PROGRESS.

Another point to be considered is the progress of the disease and its treatment. The progress is often marked by insidiousness. A case that is apparently mild will sometimes gradually drift, perhaps, without any alarming symptoms, into a grave condition with general septic peritonitis in spite of the most careful watching. The pulse and temperature may remain normal, vomiting may cease, distension may not be marked and the bowels may even continue to move, and yet a general peritonitis is developing. I am inclined to think that there is not the same effort on the part of Nature to wall off the inflamed appendix in children that so often occurs in adults. Not only is this spreading tendency of the infection insidious, but it is often very rapid.

I have encountered dozens of cases where the disease followed such a course. The following are examples:

CASE 3.—Girl, aged 13, was attacked in the early morning, April 21, 1904, with severe, sharp pain and vomited. The temperature reached 99½ and the pulse 100. The bowels moved during the day, the pain toward evening became less, and the whole aspect of the child seemed improving, the pulse became slower and the night was passed comfortably. In the morning, however, of the next day, in the course of a few hours, the whole aspect rapidly changed. The abdomen became boardlike, the countenance assumed an anxious appearance, and the pulse rose in frequency and was very wiry. There was also a tendency to vomit. At 11 a. m. of that day, April 22, an operation revealed an appendix almost entirely gangrenous and a general suppurative peritonitis. The child made a slow recovery.

CASE 4.—Girl, aged 5, was seized on the evening of Nov. 23, 1903, with abdominal pain. She vomited, and during the night was restless, temperature 99½, pulse 90. The night was passed comfortably. On the next morning the child seemed brighter, and asked for her breakfast; temperature 99, pulse 85; very slight pain was complained of. When I saw the child at 11:30 of that day (November 24), the abdomen seemed to me rather tense, three hours later the tenseness was more marked and the child looked more ill. Operation performed at 4 p. m. revealed a perforated appendix and a general peritonitis. Thorough irrigation and drainage was employed and resulted in recovery.

I could narrate many other cases where the symptoms have for days been of the mildest degree, and apparently all abating, when suddenly the conviction is forced on the physician, that some change has occurred, and operation then reveals a hopeless general peritonitis. Dr. Brannan's[1] instructive case is another example of treachery in the behavior of the appendix.

In the children there also seems to me greater liability to rapid gangrene. Of course, in adults we often encounter cases where gangrene has been rapid and extensive, but this tendency strikes me as existing more frequently in children. The following case is an example:

CASE 5.—Girl, aged 11, in the evening of July 2, 1902, while in an automobile, was seized with severe abdominal pain. During the night there was slight vomiting and some fever (101 degrees). On the following morning the abdomen was rather tense, and while the pulse was not over 80 Dr. W. K. Draper felt that immediate operation was demanded. The tenseness of the abdominal muscles was suspicious. The operation was done just twenty hours after the appearance of the first symptoms, and the long appendix was found absolutely gangrenous from its tip to its very base and even beyond. A spreading peritonitis had begun, but the child made a good recovery.

REMARKS.

Because of this treacherous behavior of the inflamed appendix in the child, as well as the inferior tendency to limit the inflammation by adhesive peritonitis, I feel very strongly that in every case of appen-

1. Medical Record, April 30, 1904.

dicitis in children immediate operation should be advised. No matter what the stage of the disease may be, I feel it much wiser to operate at once, and not delay in hopes that at a later date an interval operation may be performed. This advice is in accord with that of many surgeons for appendicitis at any age, but, as already expressed in this paper, I am not entirely in accord with such views, except in cases of children. The older the patient the less tendency there seems to me to be to spreading peritonitis, and the more unfavorable are the results of operation in grave cases.

My own experience with operations for general septic peritonitis has demonstrated to my own satisfaction that the results of the operation on young adults, if they be rapidly performed, are apt to be favorable, while those on patients over 40 or 45 are almost invariably fatal.

I thought it might be of interest to give the age statistics of 1,000 cases of appendicitis, at the time of their operation. While my operative cases number more than this, I have not included those of the last few months, as a round number like 1,000 seemed to me more convenient. I have also tabulated in 1,500 cases which I have personally seen, the ages at which, as far as could be ascertained, the first symptoms of inflammation of the appendix manifested itself.

TIME OF OPERATION OF 1,000 CASES.

Age in years.	No. of cases.	Per cent.	Age in years.	No. of cases.	Per cent.
1-2	3				
2-3	1		15-16	14	
3-4	7		16-17	24	
4-5	6		17-18	28	
			18-19	27	
1-5	17	1.7	19-20	20	
5-6	8		15-20	113	11.3
6-7	10				
7-8	12		20-25	176	17.6
8-9	10		25-30	176	17.6
9-10	11		30-35	149	14.9
			35-40	99	9.9
5-10	51	5.1	40-45	65	6.5
			45-50	35	3.5
10-11	15		50-55	15	1.5
11-12	19		55-60	11	1.1
12-13	15		60-65	6	0.6
13-14	21		65-70	2	0.2
14-15	15		70-75	1	0.1
10-15	85	8.5			

RATIO OF AGE TO FIRST SYMPTOMS IN 1,500 CASES.

The proportion which had the first symptoms in the first year is .003 per cent. of all cases.

In first 2 years	1.33
In first 5 years	7.5
In first 10 years	17
In first 15 years	31
In first 20 years	46
In first 25 years	54
In first 30 years	70
In first 35 years	82
In first 40 years	89
In first 45 years	94
In first 50 years	96
In first 55 years	98
In first 60 years	99
In first 65 years	99.5
In first 70 years	99.75
In first 75 years	100

From these statistics it will be seen that young adult life furnishes the largest number of cases of appendicitis. In those that demanded operation, the greatest number occurred between the ages of 20 and 35, the proportion being over 50 per cent. After 35 the proportion of cases becomes rapidly and progressively smaller, between 40 and 50 being but 10 per cent.

Before the age of 20, the proportion is 26½ per cent.; before the age of 15 years, 15 per cent; before the age of 10 years, .068 per cent. The youngest cases in my series were 12, 12½, 16 and 20 months, respectively. Over 60 years, the proportion was nearly 1 per cent. (.009). The oldest case was 72½ years.

THE DIAGNOSIS OF APPENDICITIS.

SHOULD THE APPENDIX BE REMOVED WHEN THE ABDOMEN IS OPEN FOR OTHER CONDITIONS? *

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So much has been written and said about the case of diagnosing appendiceal disease, so little stress has been laid on the occasional difficulty of making a correct diagnosis, that condemnation is heaped on those who fail to appreciate the real condition. Sight is lost of the fact that the best diagnosticians and abdominal surgeons are occasionally put to it to determine whether the appendix is the seat of the trouble or not. Mistakes are made by the very best surgeons. Each of us should profit by his own mistakes and the mistakes of his fellows, and each of us should be willing to give the whole profession his experiences, fairly and unreservedly.

I have only removed 272 appendices of which I have accurate records. In forty instances, multiple operations were done at the same séance, and in many of them the diseased condition of the appendix was not definitely diagnosed before opening the abdomen.

In 71 of these cases appendiceal disease was associated with or masked by one or more of the following conditions: In 4 cases by renal calculi; in 5 cases by gallstones or gall-bladder adhesion; in 18 cases by vague symptoms of indigestion, biliousness and indefinite colic; in 5 cases by frequently recurring dysentery or rectal disease; in 3 cases by acute intestinal obstruction, and in 2 cases of typhoid fever; in 12 cases by floating and diseased kidneys; in 1 case by acute septic nephritis; in 1 case by retroperitoneal tubercular abscess; in 3 cases by tubercular peritonitis; in 11 cases by marked menstrual disturbances; in 11 cases by disease of the uterine appendages; in 2 cases, retrocecal herniæ were mistaken for appendicitis, the appendices only becoming involved incidentally. In 2 other cases no diagnoses were made, but exploratory operations demonstrated appendiceal disease. In 1 case, in a young girl, a ruptured dermoid cyst was diagnosed appendicitis, and in another, a right salpingitis was diagnosed appendicitis.

I have done at one sitting, on the same patient, without unusual shock or prolonged convalescence, the following operations: Dilatation of the cervix and curettement of the uterus, removal of a number of enlarged cervical glands and hemorrhoids, anchoring a floating kidney, and removal of a diseased appendix. At another time I removed at the same sitting a diseased appendix, and did a gastroenterostomy for contraction of the pylorus consequent on gastric ulcers two years before.

In the process of evolution, medicine and surgery have reached a stage of development when such terms as colic gastralgia, acute indigestion and intestinal indigestion can no longer be loosely used in diagnosis without subjecting the user to just criticism. They are but symptoms of some definite chemic or mechanic defect in the digestive process, and careful investigation would reveal the underlying pathology, i. e., a contracted pylorus, gallstones or appendiceal disease, or partial intestinal obstruction from old adhesions.

Since Edebohls, Deaver and other leading members of the surgical side of the profession called attention to

* Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. DeForest Willard, Charles A. Powers and J. E. Moore.

the frequent association of appendiceal and pelvic inflammatory disease, a vigorous discussion has been waged pro and con, the one side claiming that inflammatory disease of the appendix is apt to involve the uterine appendages, and that disease of the appendages is often the direct cause of inflammatory appendiceal disease, while the other side argues with equal zeal that the conditions are separate and distinct and seldom correlated. They hold, therefore, that the appendix should not be interfered with when bound up in adhesions due to pelvic inflammatory disease, and that the freed appendix is not likely to give future trouble.

REMOVAL OF APPENDIX DURING OTHER OPERATIONS, INCLUDED IN CLASS 1 TO 13.

S-O., Salpingo-oöphorectomy: R., right; D., double.

	Class.	No.	Deaths.
Acute intestinal obstruction	1	1	..
Acute intestinal obstruction	4	1	..
Exploratory laparotomy	6	1	..
Exploratory laparotomy	5	1	..
Dilated stomach, contracted pylorus	5	1	..
Caseous deposit in R. kidney; nephrotomy	5	1	..
Tubercular peritonitis	5	3	..
Tubercular peritonitis	5	..	..
Ventral hernia, post. op.—repaired	5	1	..
R. S-O.	5	2	..
R. S-O.	5	..	..
Dermoid cysts of ovaries. D. S-O.	4	1	..
D. pyosalpinx, D. S-O.	5	1	..
D. pyosalpinx, D. S-O.	13	1	..
Gallstones and adhesions	5	2	..
Gall-bladder adhesions	5	2	..
Gall-bladder adhesions	5	..	..
Nephrorrhaphy, right	5	6	..
Nephrorrhaphy, right	6	1	..
Ovarian cyst	6	1	..
Cystic ovary, R. S-O.	5	1	..
Cystic ovaries, R. S-O.	5	1	..
Cystic ovaries, ovariotomy; retroverted uterus; D. ovariotomy	5	1	..
Sclerotic ovaries, morphin habitué. D. S-O.	6	1	..
Prolapsed ovary, retroversion, R. O.	5	2	..
Perineorrhaphy	5	1	..
Perineorrhaphy and trachelorrhaphy	5	1	..
Acute cholecystitis and general peritonitis	10	1	1
Endometritis, curettement	5	2	..
Retroperitoneal abscess	9	1	1
Acute nephritis; nephrotomy	1	1	1
Total		40	

APPENDICITIS (RECORD TO DATE, MAY 27, 1904).

Class.		Cases.	Deaths.
1.	Acute (first attack and operating during attack)	10	1
2.	Interval (operation after one attack)	9	..
3.	Acute (operation during attack) chronic relapsing	3	..
4.	Acute (operation during attack) recurring	5	..
5.	Interval (operation during interval), chronic relapsing	87	..
6.	Interval (operation during interval), recurring	29	..
7.	Unclassified (belonging to above 6 headings)	18	..
8.	Abscess (operating during interval)	5	..
9.	Abscess (operating during attack)	40	5
10.	Beginning general peritonitis	19	3
11.	Consultant (of which there is no record)	79	..
12.	Consultant surgeon (of which there is no record)	23	..
13.	Appendices removed during other operations—		
	Class 2	1	..
	Class 3	1	..
	Class 5	4	..
	Class 6	1	..
	Total to May 27, 1904	232	9

			Per cent.
Total deaths, 9; cases, 232			= 3.87
Deduct for *septic nephritis and septic cholecystitis	2	2	
	7	230	= 3.43
Deduct for beginning general peritonitis	2	18	
	5	212	= 2.35
Deduct for acute abscess	5	40	
	0	172	= 0.00

	Cases.	Deaths.	Per cent.
Beginning general peritonitis	18	3	= 16.66
Acute abscess (delayed cases)	40	5	= 12.5

*One case belonging to class No. 1, the other to class No. 10.

Baldy, in a paper read before the Southern Surgical and Gynecological Association in Atlanta, December, 1903, argued very earnestly this side of the question.

Such argument, it seems to me, is contrary to our knowledge of these diseases, at variance with the best clinical experience, and is conducive to incomplete surgery and unsatisfactory results.

Kelly, in his classical work on gynecology, gives the opinions of a number of the leading surgeons and gynecologists in this country on this question. Most of them were of the opinion that the removal of the appendix, unless markedly diseased, should not be a routine practice, the author agreeing with these.

The by-no-means infrequent incomplete cures following pelvic operations where appendices have been left, condemning the victim to chronic invalidism, the ever-present anxiety and danger of a severe and fatal attack of appendicitis, have impressed me with the advisability of removing the appendix during all pelvic operations when it shows the least evidence of disease, or when it is accessible and can be removed without undue prolongation of the operation or hazard to the patient.

Had I an appendix, I would feel that any surgeon opening my abdomen and leaving the organ, if accessible, had grievously sinned against me. I entertain this same feeling and a similar opinion for members of my own family. Holding such an opinion, entertaining such a feeling for my own loved ones, could I advocate less for the loved ones of others. Nowhere is the Golden Rule more applicable than in surgery, and the surgeon who does more or less for those who submit their health and lives unreservedly to his skill and honor than he would want done for him or his, under similar circumstances, is recreant to the trust reposed in him, and is unworthy the respect and confidence of honest men and women.

CASE 1.—Mrs. P. W. G., 25 years old. Gave history of having ovaries removed per vaginam one year ago. Since then has had repeated light attacks of pain in the McBurney region and in right side of pelvis. Chronic indigestion for several years. At times has a dragging sensation over right kidney. Admitted to St. Joseph's Infirmary June 26, 1903. Has marked tenderness over appendix; slightly movable right kidney; uterus free, it and cervix being atrophied.

Operation.—June 30, 1903. Gas-ether. McBurney gridiron incision; appendix found in pelvis; was thickened, very much enlarged, and attached by small adhesions. Doyen amputation. Layer closure.

CASE 2.—Miss E. S., 35 years old. Negative family history. Menstruation began at 13 years, was regular but always painful, so a curettement was done eight years ago. For the past four or five years she has suffered for five days before and five days after menstruation, with often severe pains over left ovary. A double salpingo-oöphorectomy, June, 1903, relieved her of all pelvic pain. Dysentery from November to February nine years ago. For years she has had general colicky pains lasting from a few hours to a day or so. Two years ago was in bed a month with "bilious" colic and suffered great abdominal pain. Five months after ovaries were removed she was taken with pain in epigastrium, which became localized in a few hours to appendiceal region. Since then any jolting or exercise caused pain in the *left* iliac region. A similar attack began ten days ago and pain continued until admitted to St. Joseph's Infirmary March 25, 1904.

Operation.—March 28, 1904. Gas-ether. McRae transverse incision with longitudinal opening of peritoneum, enlarged by a transverse cut. There were thick, dense adhesions of omentum, passing from cecum into pelvis to stump of removed ovary; a retrocecal appendix was dissected out of adhesions by working over and behind border of friable cecum. Appendix tore out of cecum, its lumen being closed. This umbilication was covered over by peritoneum and adhesions, a cigarette drain being carried to this point. Peritoneum closed with No. 1 catgut, silkworm gut being used for the remainder. Very little discharge followed, patient going home well April 25.

CASE 3.—Mr. W. L. L., 30 years old; traveling salesman. History of typhoid at 7, rheumatism at 10 years of age. From five to two years ago he had a diarrhea each spring, ending in a dysentery, all lasting from five to eight weeks, being confined to bed three or four days with the latter. Eighteen months before operation he awoke with slight pains in appendiceal region, which soon went to left iliac region and passed off in about five hours. No nausea or soreness. In two months a similar attack, lasting six hours, another in two months lasting eight hours, etc., an attack about every two months, each getting a little longer. Never any nausea or soreness after the third day, until six months ago, when he was in bed ten days with nausea, marked pain in the McBurney region, with a spasmodic pain in rectum, penis and perineum. Was sore for a week thereafter. Similar attack, lasting six days, two months later, with daily formation of gas in cecum since. Under stomach specialist for weeks, without relief.

Admitted to St. Joseph's Infirmary Aug. 14, 1902. Appendix could be felt (?) with thickening of cecum; urine contained a few casts.

Operation.—Aug. 21, 1902. Gas-ether. McBurney gridiron. Omentum and large intestine only found at wound. A median incision was made, when stomach and transverse colon came into wound; the latter could not be traced to the left, but seemed to enter pelvis on the right side. At first, no small intestine was found; was later located matted in pelvis and collapsed like an obstruction. Tracing the bowel for a short distance, a small Meckel's diverticulum was found; beyond this intestine was thickened, rough, granular, looked tuberculous, and soon became firmly fixed in pelvis surrounded by adhesions, so could not be brought up.

Through the McBurney wound, appendix was found in pelvis surrounded by adhesions. Doyen amputation done. Everything bled freely. Abdomen flushed with saline and each wound was closed in layers, a cigarette drain being placed in the lower angles.

Patient very much depressed for twenty-four hours. Rallied and made uneventful recovery. In two months weighed more than ever before.

CASE 4.—Mrs. H. V. J., 41 years old. Family history good. Oldest child 23 years. Was in labor twenty-four hours; placenta adherent to right side and had to be removed; was very sick for several days following. Never strong thereafter, having a dragging sensation in lower abdomen and pain when wishing to defecate instead of normal reflex. Second child 21 years old. Had hemorrhage after labor and was in bed five weeks. Two years later menses became irregular and she aborted at three weeks; was weak and had a leucorrhea thereafter, and when she walked, hemorrhage returned. Two years after abortion was in bed three weeks, at beginning of pregnancy, from weakness. Three months prior to labor, was "swollen all over" and could not lie down on account of difficult breathing. Four years after this labor was in weakened condition, when lacerated cervix and perineum were repaired, she becoming very much better, but could not walk long at a time. Was told she had prolapsus uteri. For past seventeen years menses have been regular, but she always had a dragging in pelvis and acute, general abdominal pain, which came on irrespective of quietude and lasted one to three hours, being relieved by a hot douche, enema or hot applications to abdomen. One year ago was in bed a day with acute pain over appendix and thereafter had a tearing pain in appendiceal region, when she rested on left side; much walking would also cause it.

Present Illness.—On April 21 was taken with acute pain in the McBurney region, which increased until relieved by morphia six hours later. In another six hours pain had returned and increased until bowels acted.

Admitted to St. Joseph's Infirmary April 23, 1903. Temperature 100, pulse 85, nauseated, weak, tender over right side of abdomen. Rectal feeding until operation, May 10.

Operation.—Gas-ether. Considerable débris from curettement. Laparotomy. Appendix found adherent to right ovary and tube; was much enlarged, brawny, tearing from slightest pressure. Appendix was too rotten to make cuff, so a chromicized catgut ligature was tied about same, end cauterized and stitched over. Right tube enlarged and thickened; ovary was a cyst, size of an orange; both were removed, the raw surface being closed over and stump stitched to abdominal wall to support the retroverted uterus. Layer closure. Uneventful recovery.

"Now in better health than in twenty years."

CASE 5.—Mrs. D. R. W., 33 years old. Bilious fever and later dysentery, seventeen years ago. Eighteen years ago she fell six feet and was unconscious for several hours and menstruation was delayed for six months. For twelve years after marriage she had a continuous leucorrhea, which was profuse at times. During summer of 1899 she had abscess of both vulvo-vaginal glands, followed by severe pain over left ovary, which continued, at intervals, until the fall, when an application of tincture of iodin and carbolic acid was made to interior of uterus. Peritonitis resulted, confining her to bed for two months, opiates being used to relieve pain. In January, 1900, left pyosalpinx was removed, after freeing adherent intestines, which formed a roof to that part of the pelvis. Was in good health then for a year, when she had la grippe, and tuberculosis was suspected.

Present Illness.—For two or three years has had attacks of pain in right kidney, lasting from two to three days. For a year these have been frequent, with almost constant aching, pain being relieved when she replaced the floating kidney. Has eaten little for the past two years. The smallest amount of food causes pain in right hypochondriacal region.

Operation.—March 29, 1904. Curettement, and sphincter divulsed. Ferguson incision and delivery of right kidney, which was large, hard, and capsule firmly adherent. Posterior flap of capsule stitched to muscles and anterior flap sutured between edges of wound, which was closed with silkworm-gut suture, a cigarette drain being used.

A McBurney gridiron incision was then made, when the cecum and a long appendix, surrounded by adhesions, were found under the border of the liver, the colon passing to left hypochondrium, thence to right iliac region and into pelvis. Layer closure and uneventful recovery.

CASE 6.—Mrs. J. C. H., 35 years old.

History.—Since she can remember, has had a chronic laryngitis. Always a dysmenorrhea, which was not so bad after first child, which is 11 years old. Has had hemorrhoids, almost a continuous leucorrhea and backache since birth of this child. During second pregnancy, eight years ago, she had a violent pain, like colic, in right side of abdomen; a mass soon developed in the right iliac region which was pronounced a "tubal abscess," which later "discharged through uterus" while she was pregnant! She was in bed nearly a year. At times since, has felt this mass in side of abdomen; had frequent attacks of colic, thought to be ovarian, but was conscious of two distinct kinds. Nausea, but no vomiting. Has not been able to walk much for several years on account of pain, and riding was torture. Amputation of cervix and ligation of piles one year ago.

Admitted to St. Joseph's Infirmary Jan. 13, 1904. Had right floating kidney and tenderness over appendix.

Operation.—January 14. Gas-ether. Ferguson incision and delivery of right kidney; posterior flap of capsule sutured to muscles, anterior flap brought between edges of wound. Silkworm-gut closure, with drainage. McBurney gridiron incision. Appendix found in pelvis, surrounded by adhesions and strictured near base. Doyen invagination amputation, raw surface closed over and wound closed in layers.

These appendices ought to have been removed when the first operations were done, and might have been without difficulty, and far less danger than submitting to second operations necessitated. The patients would have been cured, and the operator would have saved himself the discredit of "successful operations that failed to cure the patient."

While laying more stress on removal of the appendices before closing the incisions after pelvic operations,

I also want to put on record as holding the same view with reference to other abdominal operations. How often is the focus of infection that lights up gall-bladder disease an inflamed appendix! The frequent association of chronic appendicitis and movable kidney is now so well recognized as to hardly require mentioning.

Where the two pathologic conditions obtain, the correction of one seldom cures the other. If I am not mistaken, I did the first combined operation for removal of the appendix and the anchoring of a movable kidney through the same incision. I reported two cases before the meeting of the Southern Surgical and Gynecological Association in Atlanta. Both the cases then reported have been kept under observation, and both seem to have been perfect cures.

I have latterly, however, preferred to make separate incisions for each operation, as it requires little more time, and the work can be much better done.

FACTORS IN THE MORTALITY OF APPENDICITIS.*

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Infectious inflammation of the vermiform appendix has occupied the attention of the medical profession for many years, has been discussed and debated at hundreds of society meetings, and has furnished a fertile theme for thousands of good, bad and indifferent medical authors. Books have been written on the subject in France, in Germany, in England, and in the United States describing the historic episodes, the pathology, the diagnosis and the treatment of the disease.

The vermiform has been cut off, tucked in and turned inside out; the patients have been purged, narcotized, packed in ice or baked in poultices; they have been starved or instructed to walk on all fours like quadrupeds; leucocytes have been gazed on through the barrel of the microscope and tested for glycogen, and the urine assiduously examined for indican, acetone or albumin, and yet, with all this study, all of the examinations, a fatal appendicitis caused by a little 8x1 cm. organ has doomed thousands of suffering humanity to an early and untimely end. The lack of common sense and ordinary intelligence in eliciting the history of the attack or the neglect of the use of the only instrument of any service in the diagnosis of this disease, the palpating hand of the practitioner, is responsible for much of the mortality.

ERRORS IN DIAGNOSIS.

Errors in diagnosis are to be considered under two headings:

1. The time that elapses between the onset of the disease and the production of sufficient symptomatic reaction to attract the attention of the patient.

2. The delay of the physician himself in reaching a diagnosis.

In regard to a period of latency, it is undeniable that in a few cases the most prompt diagnosis and early operation discloses advanced pathologic changes, with a thin, seropurulent fluid throughout the peritoneal cavity. The appendix may show little macroscopic evidence of disease, or may be perforated and gangrenous. Many of these patients recover, some of them die, and in the latter event neither the practitioner nor the surgeon can be reproached for an error in judgment. They were operated on at the time of election, and were the few exceptions to the rule. Some patients suffer habitually from colicky pain in the abdomen, due to intestinal fermentation and the accumulation of flatus; some women suffer abdominal pain at the menstrual epoch; many patients have acquired the too ready habit of using laudanum or paregoric for every abdominal ache or pain, and especially when the sufferer is a child.

In such the onset of serious symptoms may not have given warning that something unusual and more severe has occurred until the disease has advanced into the later stages. It is the duty of the practitioner to continually and persistently impress on his patients the danger that lies in the uncontrolled use of opiates, particularly in children, in whom the percentage of the more severe grades of appendicitis is greater than in adults.

The failure to make an early diagnosis of acute appendicitis is responsible for most of the factors entering into the mortality of the disease. With a nearly unanimous agreement among experienced surgeons that operation is indicated in the early hours of the attack, the great importance of prompt diagnosis can be clearly perceived.

In every sudden abdominal pain the probability of an appendicitis should be borne in mind, and no other diagnosis considered until that disease can definitely be excluded.

An abnormal position of the appendix may make the diagnosis difficult at times, and in certain of the fulminating types when there is a very obscure history, it is often difficult to locate the source of the peritoneal infection. Salpingitis, cholecystitis, perforated gastric ulcer, acute pancreatitis, intestinal obstruction, mesenteric thrombosis, enteric fever, basal pneumonia, diaphragmatic pleurisy and a few other conditions are often confused with appendicitis; but the history, the onset and the sensation experienced by the palpating hand will usually differentiate the true condition.

The subject of the differential diagnosis is outside the province of this paper.

In children abdominal pain is of such common occurrence that an appendiceal colic is very apt to be unrecognized. This is especially true in the first year of infancy, and cases with comparatively mild local symptoms are certainly rarely diagnosed. If the process goes on to abscess formation, the condition is more readily discovered if the possibility of an appendicitis is not forgotten.

One of the greatest fallacies which has ever been propagated to account for appendiceal symptoms is rheumatism. In an extensive experience with appendicitis I have always found true appendiceal symptoms to be due to a diseased appendix in every case, even where rheumatism has been held responsible for the symptom-complex prior to operation. Without dilating further on the diseases that may be diagnosed when appendicitis is the true lesion, it may be well to consider why such confusion continually arises.

Acute appendicitis in the great majority of cases is easy of perception, even in the earliest stages. The disease is so prevalent, the cases observed by every practitioner of medicine so numerous, that one can but wonder at the continuous stream of pus-bearing abdomens that flow into a large hospital yearly. Every physician

* Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. DeForest Willard, Charles A. Powers and J. E. Moore.

has had one case of severe acute appendicitis, which may have caused difficulty in diagnosis, has referred the patient to a surgeon, stood beside the operating table and observed a highly inflamed appendix, perhaps gangrenous, removed. And yet this same physician a few months or years later is called to see another patient in the throes of appendiceal colic, knows well what the disease may lead to, and yet gazes, fascinated, as if by a rattlesnake, temporizes and dallies until the right iliac fossa becomes "ripe" and filled with pus.

The history of the onset and early hours of appendicitis and the results of palpation of the abdomen are signboards pointing the way, and if misinterpreted the occurrence of peritonitis, even though local in extent, may confuse the most able clinician. To paraphrase Dr. Mumford: "Do not coquet with an infected appendix; cut it out and you will never regret it."

But if the hemocytometer and microscope are used to diagnose appendicitis to the practical exclusion of clinical experience, then, indeed, will the mortality of appendicitis be in the ascendency; and, furthermore, if the laboratory is wholly relied on to determine the time of operation, then will there be a still greater increase in the mortality. I do not wish to be considered as opposing scientific aids to practical medicine, but rather as objecting to the exaggeration of their importance in the diagnosis of acute surgical diseases at a time when operation promises a nearly absolute cure.

Twenty thousand leucocytes is considered by most hematologists to be the minimum count to diagnose pus with certainty, but by the time these figures have been reached, the abscess is crying out to be released. Only recently, in a French surgical journal, it was stated that "those who doubt the clinical value of the leucocyte count are those who have been content with an occasional count. The figure must remain at 25,000 or above for several days at least to affirm the positive presence of pus. The leucocytosis increases if the abscess has a tendency to spread and when the abscess perforates into the abdominal cavity the leucocytosis subsides at first, but rises again as peritonitis develops." I can not imagine a surgeon in this country waiting in cold blood for peritonitis to develop. It is just this class of statement to which I refer in my remarks.

The concluding lines of an editorial in a recent number of THE JOURNAL of the American Medical Association exactly states my views: "Some of the old-trained delicacy of observation could accomplish as much, with less waste of time, as is now accomplished by means of intricate mechanical appliances."

METHOD OF TREATMENT.

The next question that arises after the diagnosis of appendicitis has been established, is that concerning the method of treatment to be pursued. We must face a condition, not a theory, because the issue of an attack of appendicitis can not be foretold with even the slightest amount of assurance, nor can the nature of the pathologic lesions of the appendix be deducted from the clinical manifestations. We are not governed by the same reasons that influence us to perform the radical operation for the cure of a hernia, or for the removal of the uterus for a fibromyoma. In appendicitis we face the probable consequences of those dreadful factors in the mortality of the disease—suppuration, gangrene and perforation of the appendix, with varying lesions of the peritoneum. Early operation is, therefore, a conservative, not a radical, procedure.

To delay operation until there is evidence of the presence of pus, to defer it also if there be any doubt as to the pus formation, or to wait until the leucocyte count rises or falls, is unjustifiable and nearly criminal.

Such statements, however, have become hackneyed, as I believe that every surgeon of any experience, in this country at least, advocates the immediate operation if the case is seen early.

The principle may be stated: That in every case of appendicitis, seen early, operation is indicated regardless of the mildness of the attack and regardless of the severity of the attack in the absence of a spreading peritonitis.

In stating as the principle of the treatment of appendicitis that the diseased organ should be removed immediately if the diagnosis has been made early, I am not unmindful of the fact that, speaking broadly, the attending circumstances are of great significance in many cases in determining the treatment to be adopted. It is sometimes impossible to institute early operative procedures for one of several reasons. The patient may not live within reach of a competent surgeon; he or his family may not be willing to have surgical treatment pursued until it has become evident that the patient's only chance of recovery is by operation; or there may be some serious underlying disease, such as advanced nephritis, diabetes, tuberculosis, etc., that forbids active measures. Under such circumstances expectant or so-called medical treatment is the only alternative.

Operation is contraindicated in those cases of diffuse peritonitis in which the abdomen is distended, the temperature high, the pulse rapid and of high tension, the patient's expression most anxious and indicative of very serious intra-abdominal infection, the bowels constipated and unable to cause the expulsion of flatus and in which vomiting is continuous, and tenderness is diffuse over the entire abdominal wall. The tongue is dry and brown, the skin dry, and frequently delirium is shortly followed by coma and death.

In another class of cases the features are pinched, the skin cold and clammy, the temperature is normal or subnormal, the pulse rapid and thready, the leucocytes are below normal in number and the abdomen hard and rigid throughout, without much distension. In this type of diffuse peritonitis the patient is in a state of collapse, and operative interference is almost always followed by a fatal termination.

In every case of acute appendicitis the peritoneum reacts to the irritant and secretes a serous effusion, the quantity of which depends on the amount and virulence of the bacteria or their toxins, or both. Nature then offers two measures by which the toxins may be rendered harmless and the patient recover. The first and most common is by the formation of protecting and encircling adhesions which, for a time a least, confine the infection to a localized area and thereby limit the amount of absorption. But sooner or later the purulent products extend in the direction of least resistance, thus offering a much wider field of absorption. Nature does her best in the beginning, but the aseptic scalpel of the surgeon must complete the cure by providing an external opening for the pus.

The other method I referred to consists in the peritoneum reacting to the irritation by its entire effusing surface causing the accumulation of an amount of fluid proportionate to the irritation, diluting the toxins and furnishing an antitoxin which endeavors to check bacterial invasion after perforation of the appendix (Moszkowicz). If the operation has been done in time, this

effusion explains the rapid recovery of the peritoneum from infection after removal of the appendix.

If operation is delayed, the swollen belly, filled with thin serous fluid, so often encountered at the operating table, shows that there is no tendency to form adhesions, and that large amounts of virulent bacteria or their toxins are invading the abdominal cavity. Failure to remove a collection of pus in the right iliac fossa, no matter where the locality nor what the quantity of pus, is always a source of the greatest danger and exerts a powerful influence on the death rate of acute appendicitis.

Nearly two years ago I placed a number of cases of appendicitis with abscess on the rest or starvation treatment, without obtaining any results beyond an aggravation of the symptoms and an increase in the mortality. It was observed that even the etherization of these cases was more difficult than usual, and I have frequently remarked to my students that the way a patient takes ether is often an index as to the gravity of the intraperitoneal lesion. After opening the abdomen, it was a serious problem how to dispose gauze pads before opening the abscess; there were so many adhesions, not so complete as to effectually wall off the pus, but enough to interfere with the placing of the gauze. It was also found that the infected coils of intestine were so friable that the breaking of any adhesions would cause the serous coat to peel off. The latter remark might suggest that in the presence of a walled-off abscess the peritoneal cavity should not be opened; but it is often impossible to gain access to these abscesses in any other way, situated as they are behind the cecum and colon and well to the median line side of the flank.

I do not imply that every case of peritonitis must be operated on, but, on the contrary, as I have previously referred to in this paper, that operation in the presence of an acute general peritonitis of seventy-two or more hours' duration, is attended by great risks to life, and, therefore, it is often wise to defer operation in the hope that the inflammatory process will become localized. Adhesions may form about the source of infection, and the peritoneal effusion take care of the general cavity.

Such a result is best promoted by rest and the restraint of peristalsis. When these cases are operated on at the end of three or four weeks, or at a time dependent on the degree of recovery from the acute attack, the condition of the belly cavity in my experience does not agree with that found by some writers. Instead of reducing the operation to one like the ordinary interval operation for appendicitis, I have found it one of the most difficult. Inflammation of the peritoneal cavity of such severity as to warrant delay in operation must be accompanied by effusion and exudate, and the organization of such pathologic tissue is certainly one of connective tissue proliferation with the production of numerous adhesions.

When a nearly normal peritoneum is discovered at the interval operation, with perhaps a small localized abscess, it is quite apparent that the primary lesion could not have been a severe one. Bowel necrosis from pressure of pus, metastatic abscess of the liver, suppurative pylephlebitis, purulent lymphangitis and lymphadenitis, septic pneumonia, parotitis and pyemia are well-known to all of you as occasional results of late operation.

I have referred to the fact that difficulty in etherization is in direct relation to the gravity of the abdominal lesion. The board-like rigidity of the abdominal muscles never relaxes, the patient becomes cyanosed, the bronchi filled with mucus, and at times even respiration ceases. These cases influence the mortality by insufficient relaxation of the abdominal muscles impeding the manipulations of the surgeon, making gauze packing difficult and favoring the spread of infection.

Following operation the irritation and congestion of the bronchi favor their infection and the production of an inspiratory pneumonia. For this reason it may be argued that ether is not the best anesthesia for such cases, but after a thorough trial of nitrous oxid gas, I find the combination of ether and oxygen, always followed by oxygen, to be the most satisfactory.

The presence of pus is by no means necessarily fatal if the operator is experienced in dealing with this class of cases. The salvation of the pus case lies in proper drainage with protection of the healthy peritoneum during and after the operation. Successful drainage depends on a sufficient amount of gauze properly placed, with a glass tube in the pelvis if necessary. Gauze that does not drain is more harmful than beneficial, too much gauze, and especially if improperly placed, only adding to the number of adhesions and to the chances of an intestinal obstruction shortly after operation. The management of the gauze is also an important factor in the mortality of appendicitis. The time and method of its removal are important points to be considered in every case in which gauze has been employed The tendency is to remove the gauze entirely too soon, and as this always requires force, adhesions are broken up, and infection is liable to be spread from the secreting pus cavity. To remove a gauze drain at the end of twenty-four or forty-eight hours is, in the majority of cases, removing the main hope of the patient.

Where a large localized collection of pus is accompanied with what appears to be a beginning general peritonitis with injection of the serous coat of the bowel and a considerable quantity of cloudy exudate, the question of general irrigation is to be considered. In the majority of cases the entire peritoneum is not infected, and this membrane can better take care of diseased products unaided. I rarely irrigate such an abdomen.

Failure to explore the pelvis is another factor of no little importance. In very many instances a collection of cloudy serum or pus may occupy the pelvis, and unless discovered and proper drainage provided proves a menace to the patient. Secondary collections in other localities must be evacuated and drained.

Acute intestinal obstruction following operative interference in acute appendicitis is one of the most serious of the sequelæ of this disease. The gravity of the condition depends on the fact that a second operation is always urgently demanded. In the presence of an infected area of the peritoneal cavity, and with the already weakened resistive power of the patient to shock, it would naturally follow that the mortality of acute obstruction is high. Following the evacuation of a circumscribed abscess, the exudate which has served the useful purpose of restricting the spread of infection becomes a menace by its liability to organize into connective tissue. Such adhesions may give rise to disastrous intestinal complications. By their mere adhesion to portions of the bowel they inhibit peristalsis, and by their contraction cause intestinal obstruction. Injury to the free edges of the omentum or mesentery may result in their adhesion to the small bowel with a consequent obstruction.

The greatest number of acute obstructions of the in-

testine follows those cases in which an abscess existed at the time of first operation and in which drainage was used. This furnishes a most potent argument in favor of the early operation with removal of the appendix before the extension of the inflammation gives rise to a serofibrinous exudate. As I have remarked in a previous paper, "walled-off" is an expression often used by physicians as a term of congratulation, but it also denotes a most fertile condition for a future intestinal obstruction.

I find obstruction to follow acute appendicitis in about 1.5 per cent. of cases, and to be due, of course, primarily, to bands of adhesions, but also predisposed to by too early and injudicious feeding of the patient. The resulting increased peristalsis and general intestinal disturbance cause congestion and swelling of the intestinal wall, further narrowing the lumen of the bowel.

Fecal fistula may follow cases in which an abscess collection causes pressure necrosis on the bowel, when the cecum is directly involved in a gangrenous process, or where the entire appendix has not been removed. While such fistulæ do not directly have great influence in increasing the mortality, yet the operation which must later be undertaken for their repair is by no means devoid of risk.

Finally, the great percentage of extensive drainage cases are followed by hernia, for which mechanical appliances are of no avail. Hernia requires a secondary operation which is more formidable than the primary one.

In conclusion, I would again urge on you to advocate the early operation for appendicitis. The tendency of many surgeons at the present time to occupy a sort of middle ground should not be imitated by the rising generation. I know of successful surgeons who operate immediately when a case reaches the hospital, and yet who formulate and teach their students so many rules for the treatment of appendicitis that a text-book of surgery must be carried around in the medicine case. Furthermore, an expression of opinion from members of a surgical association is always of interest to the general practitioner. Too often the discussion of a paper is limited to congratulatory remarks, surgeons whose teaching is of infinite value preferring to praise or conciliate a friend rather than to boldly announce their own ideas and practice.

DISCUSSION

ON PAPERS BY DRS. M'COSH, M'RAE AND DEAVER.

DR. ERNEST LAPLACE, Philadelphia—I believe that in every fatal case there was a time when, if the operation had been performed, the patient's life might have been saved; but somebody has been guilty of allowing that moment to pass by. I deny that any one can establish the fact that there is pus in the abdominal cavity, that there is a developing case of peritonitis, or can deny the occurrence of fulminating appendicitis. If we accept this it follows that by delay we are in a great state of uncertainty as to the future of that patient. Taking this for granted, it is useless to deny the necessity of operating during the course of the disease. You should do the operation and use common sense, according to the rules on which our knowledge of surgery is founded. In every case, when possible, I believe in the dry method of operating. I drain and pack, and remove the gauze on the eighth day. When peritonitis occurs, one is face to face with another problem. Another disease has stepped in, and that is general septicemia. The patient may die from general septicemia although the local peritoneum has undergone improvement. A patient may die with tetanus even though his thumb has been amputated. These cases should no longer exist when a primary operation has been performed. I treat general peritonitis on the same common-sense principles that I would erysipelas. I watch it continuously and treat it locally. I flush with sterile water. I wish to say that the day has come when we must abandon the saline solution, because it may irritate the inflamed peritoneum. I have satisfied myself as to this absolutely by experiments on a man with one good eye and one bad eye. The solution irritates the inflamed eye but not the healthy one. I practice repeated irrigations after the operation through tubes above and below and in each lumbar region. Leucocytosis is of no help to decide when to operate. Immediate operation is generally indicated. If a man drops into the water, struggles and finally disappears, will you try to save him or will you say he will be up again and we will save him then? Palpating with the hand is the only true test of an underlying irritation and inflammation. This reveals the rigidity of the muscles of the abdomen over the seat of irritation and points to immediate operation.

DR. J. E. SUMMERS, JR., Omaha—Diaphragmatic pleurisy is sometimes in the way of diagnosing appendicitis, particularly in children, but I believe it can be very readily recognized. In a number of cases, in endeavoring to elicit the physical signs, I have found almost complete absence of the respiratory murmur over the lower part of the right lung. In such a case one can say that he has a pleurisy to deal with. It is usually in pleuropneumonia that the pleuritic elements largely predominate. Dr. McCosh did not refer to typhoid fever as a complicating factor in making the diagnosis; the general symptoms are usually more severe than the local ones, but you do get localized symptoms on pressure as in appendicitis, but not so characteristic. As to Dr. McRae's remarks, I would say that if the difficulty for which the abdomen is opened is complicated by appendicitis the appendix should be removed, otherwise not. As to Dr. Deaver's paper, I am almost too modest to discuss it on the adverse side. I did my first operation for appendicitis nineteen years ago and since that time I have been on all sides of the fence regarding the time for operation. In later years I have taught that Deaver is too radical, and statistics will prove that our mortality is unnecessarily high if we follow his advice. When the disease is progressing, and I am convinced of the symptoms of perforation, I operate with good results. If we operate on the third, fourth or fifth day we lose too many patients, whereas if we do not operate, but go according to the teaching of Dr. Ochsner, many more cases recover. Statistics in my community show that this is so. Since we have stopped following Dr. Deaver we have obtained better results. I am glad to see that Dr. McCosh has become more conservative. Perhaps others will follow him in the adoption of the Ochsner treatment. It seems foolish for us to discuss Dr. Deaver's paper, but maybe he has not yet told us the way to do the operation.

DR. F. L. HUPP, Wheeling, W. Va.—It is an unfortunate fact, but one which we are obliged to accept, that all cases of appendicitis do not get well. One of the factors determining a fatal issue, where there has been a beginning diffuse, septic peritonitis antedating the surgical interference, is a continuance of this process. Of the seven cases of this kind that have come under my care in recent years and been operated on, two have died in this way. Practically all other deaths in these cases were a result of well-known and recognized causes; but within the past four weeks there has come to my notice a case of appendicitis which presents a unique feature in these mortality factors, so far as my experience goes. A boy of 14 years of age was admitted to my service in the City Hospital of Wheeling, W. Va., who had been treated by his family physician for typhoid fever for a period of eleven days prior to admission. His symptoms seemed to have been typical up until the tenth day, when there was discovered an induration and localized tenderness in the right iliac region. On the day of admission, May 6, under chloroform narcosis, the usual incision was made and about an ounce of very offensive pus was removed from the retrocecal region. In the washing there escaped a tubular segment of the appendix vermiformis, much resembling a macerated piece of macaroni. A suspiciously dark

area was detected over the cecum, but because of the profoundly collapsed condition of the patient no further interference was deemed advisable. Well-directed drainage was established and the patient removed from the table. Forty-eight hours after the operation the dressing was repeatedly saturated with a dark, offensive, coffee-ground fluid, and at times there seemed to be some fresh-looking blood with the exudate. The drainage strips were removed and there welled from the depths of the wound a quantity of decomposed dark blood clot. Collapse and death followed three days after the operation. The real interest in this case centers in the autopsy. The cecum, buried in a mass of rather firm adhesions, was the seat of a gangrenous perforation sufficiently large to admit two fingers. No remnant of the appendix was discernible. A very extensive extravasation of old decomposed blood was found distending the cecum, ascending colon and part of the ileum. Peyer's patches exhibited the typical typhoid lesion and an eroded vessel in the base of one of these ulcers demonstrated the seat of the hemorrhage and the cause of death.

DR. A. JACOBI, New York City—I have not operated for anything that looked like appendicitis or perityphlitis for twenty years, so that I certainly have no right to speak of the operation as such. Still I have seen a great many cases of appendicitis and have been present at a number of operations. What I have seen is a great many cases of sudden onsets, with rapid pulse and high temperatures, which when left alone were better prepared for operation at the end of a week, and there are many surgeons of the same opinion. I recall a case that I saw recently with several other physicians in which some of us desired an immediate operation. A surgeon was called in, who stated that if he operated on the case in its present condition, with the high temperature and the state of collapse, the operation might be successful, but the patient would die. He operated a week afterward and the patient recovered. I have seen a number of such cases operated on at the end of a week and they recovered. On the other hand, we see many cases of appendicitis get well under what is called medical treatment. That is not infrequent with children who, though they may have other attacks, still recover, and after growing up never have another attack. I do not believe that there should be for all cases one and the same rule. What I am more interested in is the diagnosis, and that, we are told by Dr. McCosh, is sometimes very difficult. Eight weeks ago I was called to see a child 4 years old who had been ill two days. There was a physician in attendance and two consultants beside myself. There were very few symptoms, but appendicitis had been mentioned at first by the family physician. None of us was ready to make a diagnosis of appendicitis. The child had vomited three or four times a day for two days and there was some diarrhea. The tendency among the doctors was to call it gastroenteritis. There was very little pain and all that I could elicit was on the left side of the transverse colon. It appeared to me to be a pressure pain, as it was not present fifteen minutes afterward. There was no muscular rigidity over the appendix nor any pain when pressure was suddenly discontinued. Meltzer's symptom was absent; there was but little tympanites. I saw no reason to diagnose appendicitis and one of the famous surgeons of New York was called in and also said that it was not appendicitis and that there was no reason to operate. Two days afterward the child died, and the postmortem showed an abscess and many adhesions. There are cases in which no diagnosis can be made, as Dr. McCosh has told us, either by the medical or the surgical man. I have no particular reason for recalling this case except that I have been conscience-stricken all the time, and still I do not know how to avoid a mistake when there are no symptoms pointing unmistakably to appendicitis. Unfortunately, such doubtful cases do occur.

DR. HENRY O. MARCY, Boston—It is quite eighteen years since my first operations for appendicitis. During this period, both in public and private service, my operations have been too numerous to demand statistical tables, and yet not one of the entire series but has made an easy recovery where the appendix had not ruptured prior to operation. Experience is now ample on which to formulate rules for surgical guidance. I am not quite ready to say, "When in doubt, operate." The wise surgeon makes an early diagnosis. It often demands heroism to be guided by the fact that the sins of omission are to be judged on the same plane as the sins of commission.

DR. WILLIAM H. WATHEN, Louisville, Ky.—Dr. Deaver praises the general surgeon in his work in appendicitis at the expense of the gynecologist, but he fails to tell us that the basic principles of all successful abdominal surgery were evolved from and made eternal in the work of the gynecologist. The gynecologist taught the general surgeon the underlying principles that to-day are held sacred in all intraperitoneal surgery, and this encouraged us to efforts in the application of surgical treatment to the diseases of the appendix, gall bladder, bile ducts, stomach, duodenum, pancreas and other abdominal structures. It is true that the general surgeon has done much in perfecting a technic in surgery of the appendix and upper abdomen, for which we give him much praise, but this improved mechanism in operating was made possible by the conditions that preceded his advent into the peritoneal cavity. We include in our American Gynecological Society every disease in the abdominal cavity which is treated by the general surgeon. Then let the gynecologist and the general surgeon unite in efforts to evolve the best methods in the diagnosis and therapy of diseases in the abdominal cavity, for there is no consensus of opinion on many vital questions, and we have much to learn and much to forget. While it is generally agreed that the appendix should be removed if the patient can be operated on before the inflammation has extended to the adjacent peritoneum, and that the operation is also indicated between the attacks, there is no agreement as to what should be done in all acute cases where there is a periappendiceal septic involvement. Dr. Ochsner treats these cases by stomach lavage, and claims results far better than he had obtained by operation, while Dr. Deaver claims the reverse in his work; and as these gentlemen have had much experience, this difference of opinion and practice must be carefully considered and logical conclusions accepted. I am sure I have had deaths in operations for appendicitis in acute cases where adhesions had formed, and where I opened the abdomen immediately over the infected area, because I could not intelligently separate adhesions and successfully protect the surrounding peritoneum from infection. By making the incision to the left and beyond the infected area, splitting the rectus muscle, or opening through the linea alba, we may isolate infection and intelligently treat pathologic conditions. In diffuse suppurative peritonitis, in appendicitis, stomach or intestinal perforation, gall-bladder rupture and visceral wounds, my experience and observation have taught me that we may expect better results where we avoid the additional peritoneal irritation necessarily resulting from saline irrigation or extensive sponging. After thorough irrigation and sponging, much septic matter will remain in the cavity, and the added traumatism to the peritoneum will so impair its resisting powers as to encourage the more rapid multiplication of pathogenic bacteria. The mortality will be less if we operate on such cases quickly. Do not irrigate, do but little sponging, and drain from the lowest part of the cavity by a large gum tube, thus removing intraperitoneal tension and thereby increasing resistance to further bacterial multiplication and invasion. I believe that much of the mortality in these cases is the result of too much irrigation and sponging and insufficient drainage. If the infection is virulently streptococcic, the cases will die under any treatment, but otherwise most of them will recover if treated as I have suggested, if the operation is not too long delayed.

DR. ERNEST LAPLACE (replying to Dr. Wathen)—I stated that where pus extends all over the peritoneum and the inflammation is general, we can not thoroughly cleanse the peritoneum at the time of the operation. In these cases only do I advise repeated irrigations by the method I have introduced.

DR. A. J. OCHSNER, Chicago—I would say that there are two classes of cases of acute appendicitis in which it is sometimes difficult to limit the infection to the vicinity of the appendix, because of the absence of a sufficiently large omentum

to surround the diseased appendix. This condition is frequently found in young children and in greatly emaciated adults. In these cases an early operation is consequently indicated, and if this can not be done for any reason it is best to place the patient in Fowler's position. I have learned more about appendicitis from Dr. Deaver than from any other man. I always learn when I see him operate or when I hear his discussions on this subject. Dr. Deaver and I have agreed for years as regards the treatment of all cases of appendicitis with the exception of one class. We have agreed on the wisdom of removing the appendix so long as the infectious material is still confined to the appendix. Cases of appendicitis in the interval should be operated on. Where there is a circumscribed abscess that abscess should be drained. There is one class of cases of appendicitis on which we have not agreed, although I am very positive Dr. Deaver will agree with me just as soon as he will be convinced of the fact that it is reasonable and that it is beneficial to the patient. Within the last month, in the preparation of another paper, I have had tabulated the last 1,000 cases of appendicitis on which I have operated in the Augustana Hospital. These cases were taken consecutively during the last thirty-three months. The following table shows the results:

July 1, 1901, to April 1, 1904, 2 yrs. 9 mos.	Cases.	Deaths.	Per cent.
Chronic appendicitis or interval operations	500	3	.5
Acute appendicitis without perforation	255	5	1.9
Treated by absolutely prohibiting all nourishment and cathartics by mouth previous to operation	55		
Operated on within 36 hours	6		
Acute appendicitis, perforated or gangrenous without abscess	55	0	0
Treated by absolutely prohibiting all nourishment and cathartics by mouth previous to operation	34		
Operated on within 48 hours	5		
Acute appendicitis, perforated with abscess	117	4	3.4
Treated by absolutely prohibiting all nourishment and cathartics by mouth previous to operation	78		
Acute appendicitis, with diffuse general peritonitis	33	10	30.0
Total	1,000	22	2.2

Out of 540 interval operations 3 died, all as a result of an additional operation for pyosalpinx. Of acute appendicitis without perforation there were 255. Of these I operated at once on 200 and treated 55 by starvation. I lost 5 cases in the 255, a mortality of 1.9 per cent. The reason the 200 were operated on at once was because the infection seemed to be still confined to the appendix. Fifty-five cases suffered from perforated and gangrenous appendices without infection of the general peritoneal cavity; of these 34 were starved previous to the operation and the remaining 21 were operated on at once, because it seemed clear that the infectious material was still confined to the appendix. Gangrene had occurred, but it was completely occluded from the peritoneal cavity by being shut off by the omentum. Although the appendix was perforated still there was no infection outside of the appendix and a small piece of the omentum that surrounded it. This was removed, together with the appendix, and no death resulted. It is in the next class of cases that there would have been a large mortality had they all been operated on at once on admission to the hospital. There were 117 cases of perforative appendicitis in which the infectious material was not circumscribed, and of these 78 were treated by starvation. It is in this class of cases that every surgeon who operates at once on making the diagnosis has a large mortality. It was the proper treatment of these cases that reduced the mortality to 3.4 per cent., and it is in this class of cases that thousands of lives are being saved all over the United States by the treatment which changes a dangerous acute into a relatively harmless chronic condition. Of the 117 there were many in which it seemed when they entered the hospital that they were suffering from diffuse peritonitis and I did not know absolutely how extensive the infection was. These cases corresponded to a definite type, there being a bad facial expression, cold perspiration, distension of the abdomen and contraction of the abdominal muscles. If these 117 cases had been operated on at once there would have been a mortality like that which Dr. Marcy mentioned. Nearly 40 of these cases would have died under ordinary skill, but with Dr. Deaver's extraordinary skill the mortality would, of course, have been less, but still several times as great as it was by placing them temporarily on this definite form of treatment, consisting in the use of gastric lavage and the absolute prohibition of all nourishment and cathartics by mouth. One of the surgeons in a large Vienna hospital claims that a diffuse peritonitis will become circumscribed as a result of the antitoxic action of the secretion. There were 33 cases who suffered from diffuse peritonitis when they first entered the hospital. Some were in such a desperate condition that they were not operated on at all. Our mortality in this particular class of cases is larger than it would reasonably be under ordinary circumstances, because no patient suffering from appendicitis is ever refused admission even though he may die immediately after entering the hospital. Many patients enter in a hopeless condition, the result of the administration of some form of food or cathartics during the early portion of the attack. These patients are usually admitted between the third and the tenth day of the attack. Of the 33 cases only 10 died, and 7 of these were so far gone that we could not operate. If we had operated on the other 26 immediately on their admission there would have been many more deaths. In 1,000 cases there were 22 deaths, or 2.2 per cent. There is one point which I wish to emphasize especially—in cases in which the infection had already advanced beyond the immediate vicinity of the appendix at the time of admission to the hospital, a definite form of non-operative treatment based on definite principles which I have frequently described[1] was instituted. The main features of this treatment consist in removing the contents of the stomach by gastric lavage and then giving absolutely no nourishment of any form and no cathartics by mouth, giving no large enemata, but supporting the patient by the use of small nourishing enemata not to exceed four ounces, administered through a soft rubber catheter introduced from two to three inches. The nourishment is given every three to four hours. It consists preferably of one ounce of some commercial predigested food dissolved in three ounces of warm normal salt solution. At first the patient is not permitted to drink water, but may rinse the mouth with cold water. Later small sips of hot water and still later cold water is given by mouth. It is well not to return to any form of feeding by mouth too soon, and it should be begun very cautiously.

DR. JOHN B. MURPHY, Chicago—We are agreed that all cases should be operated on early, that the least possible manipulation should be made, and that the waiting plan and starvation treatment is only indicated in a few fulminating cases in the active stage. There are a few elements in the mortality which have not yet been mentioned, and the most important is the type of infection. There are types of infection which will go on to a fatal termination no matter what we do. They are rare, however, in the peritoneal cavity. There is another element which affects the prognosis. "When the symptoms subside I wait," say some men, and that is the fatal mistake. When the symptoms suddenly subside I am frightened. My experience has been different from Dr. Deaver's and Dr. Ochsner's. Some years ago I stated that a large number of cases of general peritonitis would die no matter what we did for them, and I now want to apologize for my error. I have had sixteen consecutive cases of general suppurative peritonitis, perforative; and I do not mean simply that there was a large quantity of pus in the peritoneal cavity; I mean the result of perforations. They include perforations of the stomach, duodenum, intestine and appendix. I operated on all sixteen cases immediately and all recovered but one. I have not had a death from general septic peritonitis from any cause in over two years, except this one. It occurred in a child with a five-day general suppurative peritonitis, from perforative appendicitis. The patient died from a double pneumonia six days after operation and at a time when all peritoneal symptoms had subsided. The operation makes the difference, and formerly patients had been killed on the table because too much work was done in the abdomen at the time of severe toxemia

1. THE JOURNAL A. M. A., Aug. 29, 1903, p. 546.

and severe depression. Pus retained under pressure is rapidly absorbed, whether it be in the peritoneal cavity or elsewhere, and to stop absorption all that is necessary is to relieve the tension. If we have an acute phlegmon of the leg we do not wash it out, sponge it, scrape it, or get our hands or feet into it; we simply relieve the tension by opening it, and we have just that to do in peritoneal infection and in addition close the opening from which the infective material is leaking. There should be no washing, no sponging, no handling of the viscera. I advise putting a rubber drain down into the vesico-rectal fold and placing the patient in the semi-sitting position. I am sorry to differ from Dr. Laplace, who gets results from washing, while I get them without washing. I do not question his results, but I should have to see every detail of his technic and of his treatment before I would consider changing. I do not care what the technic is if the results are secured. I have operated on every case of general suppurative peritonitis that has come under my charge in the period mentioned with the above results.

DR. JOSEPH PRICE, Philadelphia—Dr. Murpay tells you "to get in promptly and play the game," which is just what you should have done in surgery many years ago and the mortality would have been greatly lessened or *nil*. Dr. Ochsner's paper in Saratoga has had a very bad influence. In Dr. Murphy's series of sixteen incised perforations he lost one. He would have saved this case if Dr. Ochsner had not read or published his paper, and probably favored the delay. I read a paper some years ago on general suppurative or septic peritonitis, and the Chairman left the chair in this Section and said he could not let it go unchallenged. Dr. Deaver does not lose cases that walk the streets without appendicitis. Such cases as Dr. Ochsner reports in his first series of 500 (borborygmus) none should have died. Dr. Deaver never loses such cases nor does he operate for borborygmus. My mortality in 600 cases was four cases. The four deaths and the quite universal custom of drainage was largely due to the very strong influence of Dr. Ochsner's paper at Saratoga on the general practitioner. The gynecologists have taught you all you know. If you want to know anything about drainage come to Philadelphia. Many of us have lived through our period of usefulness, beyond the age of 50. Do not let the youth of the country die in such large numbers. A few years ago 400 deaths from appendicitis were recorded in Chicago in one year. Since then Chicago has probably lost 1,600 a year from appendicitis. If we put the mortality at 100 to the state (very light) we have a death rate in the very future of our population of 5,200 a year. No one should ever be permitted to die of appendicitis. There is no therapeutics in its management, no starvation, no sweet oil, no icebag—only clean early surgery following the diagnosis, which is easily made. This sharp discussion reminds me strongly of the old discussions on this subject many years ago. Many of us fought the battle all over the land and thought the last word had been said, and rejoiced that the natural history and treatment had been established for all time.

DR. ROBERT T. MORRIS, New York City—Should we remove the appendix when the abdomen is open for some other cause? Our best statistics occur among people who have no occasion for any sort of surgical operation. The next best statistics occur among people who require the least amount of surgical work. The logical deduction is that the easier we allow a surgical patient to escape the better will be the record. Leave the appendix alone until it is infected, and then lose no time in having it inspected. That couplet expresses my views. There are three chief objections to the plan of removing the appendix when the abdomen is open for some other cause. First, it prolongs the other operation. Next, the patient's resistance factors may not have been called out to meet the little special infection that may occur from opening the lumen of the bowel. Third, if the procedure is taught by competent men it will be carried out by some who will manage to get a death rate out of it. Dr. Deaver speaks about "kindergarten drainage in New York." It is better than committing taxidermy on your patients, but there are many operators in New York who agree with Dr. Deaver. Some of those who have arrived at the point of making "kindergarten drainage" have such good statistics that they are accused of removing normal appendices in order to get such results. Gauze packing in the peritoneal cavity is a foreign body, and harmful and unnecessary. Take ten healthy policemen from the street to-day and put half a yard of gauze in the abdomen of each one, and we shall probably lose one or two of them. If strong, healthy men can not bear the presence of gauze in the peritoneal cavity how can weak appendicitis patients bear it? Do not commit taxidermy on appendicitis patients. Some of us do not use any gauze packing at all in the peritoneal cavity.

DR. MORDECAI PRICE, Philadelphia—Within the walls of this room are men who have seen me open 100 cases of general peritonitis and gangrene from appendicitis, and with thorough washing only two or three have died in the state of New Jersey. Probably in Dr. Ochsner's cases his treatment is all right. In the hands of the gentlemen throughout this country it has been anything but satisfactory. Appendicitis has no place in our work except for immediate removal. I remember the case of a young lady who was almost dead. I could find no tumor but a pronounced resisting point, and I diagnosed appendicitis. I said I should remove the appendix within the next twenty minutes and did so, when I found it gangrenous beyond repair. I remember another case which had been ill for five days. There was a pronounced resistance over the appendix and I advised immediate operation. The woman had not had a pulse over 80 nor any temperature. I operated and found a gangrenous appendix, although she had not seemed to be very sick. Dr. Jacobi asked about diagnosis. When you get hold of a patient where you can not tell just exactly what's the matter, and there is a slight resistance over the appendix, take it out.

DR. DEAVER—Dr. Summers evidently misunderstood me. I made the statement that operation should be done in all cases when the patient was seen early. I have advised delay in certain cases in the presence of a general septic peritonitis. I do not take out the appendix in all cases. Dr. McCosh advises that we wait until recovery from the attack, but I consider this dangerous practice in certain cases. Dr. Jacobi, like many medical men, has not the courage to decide that the case belongs to the surgeon. Many young doctors never realize the value of palpation. There is no doubt but that had the Jacobi case been seen by Dr. Ochsner, Dr. Price or others, the diagnosis would have been made. Better take out a healthy appendix and have the case get well than leave a diseased appendix and let the patient die. I could never understand this question of diagnosis. How do these distinguished people make such errors? The diagnosis is usually made by my internes and it is rarely necessary for me to walk into the surgical ward to do this. If internes can do it, surgeons should do better. Dr. Wathen has referred to the gynecologists. They should confine their work to the pelvic cavity. If seen early appendicitis should readily be diagnosed. As to treatment, there is a great difference of opinion. I can not interpret my friend Ochsner's statistics. My cerebration may be a little defective. I do not operate on cases with advanced peritonitis of several days' duration that are practically moribund, as I stated in my paper. Before I came here I looked up my mortality since January 1. I do not like to speak about it here, because I do not expect anybody to believe it any more than I should expect to believe others. I have operated on 159 acute cases since January 1, on patients who had been ill for from three days to four or five weeks. I have evacuated appendiceal pus by the gallon. The statistics of these acute cases is 5 per cent. plus. I am convinced that there is no treatment under the heavens other than the judicious surgical technic that would give you as low a mortality as this in acute cases. I do not expect to lose any in the interval operation, but when we do it is usually from pneumonia, and such exceptions will occur. I go Dr. Murphy one better. He had sixteen cases with one death, while I had sixteen with no deaths. The class of cases of general peritonitis that I have had recover had only been ill a few hours. I operated on a case of that kind last Saturday. The temperature was 104, the abdomen was distended, there was muscular rigidity, and when I opened the abdomen I rolled out an inflamed appendix,

followed by much pus. I put a glass drainage tube into pelvis, when more pus was evacuated. What I take exception to in Dr. Ochsner's treatment is the danger of its being used in just such cases as mine. The only solution is: Don't stand with your hands in your pockets and dilly-dally. Don't give calomel and call in several consultants. I do not agree even with one so distinguished as Dr. Jacobi. Open the abdomen and take out the trouble.

THE MORTALITY AND MANAGEMENT OF PNEUMONIA.*

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Pneumonia continues, in our country at least, the greatest medical problem of the day. Its prevalence and its fatality are markedly increasing, and this at a time when there is a growing, if not as yet a distinctly expressed opinion, within as well as outside the profession, that this situation is needless and should not exist. Under these circumstances it may be well for us, at the end of another pneumonia season, to review the pertinent past, take stock of the present, and as carefully as possible scan the future for some promise of relief.

Pneumonia is ubiquitous, and in temperate regions is the severest and deadliest of the commoner diseases, and is productive of more deaths than any other. It is responsible for an annual morbidity of about 0.7 per cent., a mortality rate of about 0.13 per cent., and it causes about 8.1 per cent. of all deaths. That it is steadily increasing in prevalence I have already proved, and the fact is graphically shown by the charts on the wall. Here it may be seen, among other showings, that in New York an annual mortality of about 1.3 per 1,000 of population in the decade 1804-1813 rose to about 2.5 per 1,000 during the terminal decade of the century; that in Philadelphia the average mortality rate of 1.2 per 1,000 of population in the years 1861-1870 rose to 2 per 1,000 in the decade 1893-1902; that in Chicago the rate of 0.5 per 1,000 of population in the decade 1851-1860 was tripled during the decade at the end of the half-century.

A reasonable explanation for this increasing prevalence of the malady may be found in a consideration of certain facts appertaining to some of the factors which are especially active in bringing about this result: The pneumococcus varies in virulency in different strains, and any strain may be made more or less virulent by cultivation. That the increased prevalence and heightened death-rate may be due to the propagation, survival and dissemination of the most virulent varieties is a fair inference. The pneumococcus is found in the upper respiratory tract of many persons in health; and this occurs in a very much larger proportion of the population than the statements of most observers in this field would indicate. In a series of observations made during the past few months I found the pneumococcus in the secretions on the tonsillar surfaces or other portions of the upper respiratory passages in more than 45 per cent. of the 135 persons examined. A remarkable, and, I believe, a most important, observation was made in this series, namely, that in some instances the bacterium was found in every, or nearly every, member of a family, while in other families every member would be exempt. Further analysis revealed the fact that in a majority of the families in which the germ was found to be so freely disseminated one or more cases of pneumonia had more or less recently occurred, while the histories of the other class of families were free from such cases. These features were so prominent as to make a profound impression on my mind, and I am of the opinion that the fact, if further observation should prove it to be a fact, is of prime importance, inasmuch as it offers a ready explanation for the house epidemics and consecutive family cases which not infrequently occur; and also, and more important, clearly and directly points the way toward a reasonable and practicable system of prophylaxis.

How is the pneumococcus disseminated? How can we account for its excessive prevalence in some families? Why is there, probably, an increased and increasing diffusion of this germ? How does it produce pneumonia? These are fundamental and very important questions, and it is regrettable that the present state of our knowledge does not permit a direct answer to them. However, certain assumptions may be made with the assurance that they do not lie far from the line of truth; that they offer plausible explanations for many of the known facts, and that they may be employed as a basis for the propaylactic management of pneumonia.

The pneumococcus is probably disseminated by the coughing, sneezing and expectorating of persons harboring the bacterium in their respiratory passages. This would account for its extensive prevalence in certain families, i. e., the chances of an unaffected member becoming infected would be greatly multiplied by living in close contact with those already affected. That there is an augmented and rapidly increasing prevalence of the pneumococcus, with a larger and an increasing proportion of the population acting as hosts and distributors of the germ scarcely admits of question; but this seems amply accounted for by the increased facilities for travel and public assembly which are demanded by the spirit of the times. Pneumonia is caused by pneumococci obtaining access to and developing in the pulmonary alveoli. A paretic state of the laryngeal and bronchial reflexes, such as may be produced by undue exposure to cold, or by exhaustion, or by profound sleep, may permit the aspiration of pneumococcus-laden particles of mucus or other fluid from the upper to the deeper respiratory passages. Another route which the infective germ may take is through the circulation, the pneumococci entering the blood current from the throat, attaining extraordinary virulency by growth in a peculiarly congenial culture medium, and making their way to the pulmonary alveoli. The bearing of these hypotheses on the general management of pneumonia will be considered later.

The mortality of pneumonia is very great, the rate being slightly in excess of 20 per cent. In 1892 I published a table on the mortality of pneumonia, embodying the statistics of 223,730 cases. This inquiry has been continued to the present time, and my full table now comprises 465,400 cases, with 94,826 deaths, a rate of 20.4 per cent. (See next page.)

Certain fallacies are inherent to a table of this kind. For example: As compared with private practice, the mortality in public charitable hospitals is very much higher, while it is much lower in armies in time of peace, these differences depending directly on the differing characters of the patients. Again, the malady seems to be more dangerous in some countries than in others, probably due to variations in the virulency of the infecting organism. Finally, many series of cases are published for the purpose of illustrating the advantages of some favorite method of treatment, and in these instances the reporter is prejudiced and is prone to omit

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TABLE SHOWING CASE MORTALITY OF PNEUMONIA.

Observer.	Cases.	Deaths.	Per Cent.	Reference.
Acerbi	142	16	11.2	Med. Prac., Milano, 1819, p. 94.
Adams	25	0	0.0	Am. Jour. Obst., 1901, xliii, p. 632.
Aiello	4	0	0.0	Gaz. Med. Sicil., 1899, iv, p. 13.
Allen and Lull	4	3	75.0	Ann. Surg. Oct., 1901.
Allyn	8	6	75.0	Phil. Med. Jour., Dec. 7, 1901, p. 999.
Altschul	62	0	0.0	Med. Rec., March 26, 1904.
Anders	7	4	57.1	Trans. Pan-Am. Med. Cong., Wash., 1893, p. 264.
Anders	5	1	20.0	Jour. Am. Med. Assoc., June 15, 1895, p. 91.
Anders	30	10	33.3	Univ. Med. Mag., 1898, x, p. 641.
Anonymous	90	12	13.3	Boston Med. and Surg. Jour., May 21, 1868.
Anonymous	17	3	17.6	Brit. Med. Jour., 1896, i, p. 1229.
Antonin	577	7	1.2	Inaug. Dissert., Bucharest, 1887.
Audeoud	3	0	0.0	Rev. Méd. de la Suisse Rom., 1893, xiii, p. 130.
Aufrecht	1,501	253	16.8	Lungenentzündung, Wien, 1897, p. 133.
Austro-Hung. Army	8,387	612	7.3	Private Com. Surg. Gen. (1897-1901).
Baginsky	199	49	24.6	Pneumonia u. Pleuritis, Würzb., 1880.
Baginsky	60	6	10.0	Arch. f. Kinderheilk., 1891, p. 13 and 1892 p. 286.
Balfour	645	145	22.4	Brit. Med. Jour., 1898, ii, p. 297.
Ballard	682	143	21.0	Allbutt's Syst. Med., 1896, i, p. 655.
Bamberger	60	4	6.7	Wiener med. Wochenschr., 1857, No. 5.
Bang	54	2	4.0	Ranking's Abst., No. 28, p. 92.
Banti & Pieraccini	21	6	28.6	Settim. Med., 1899, IIII, p. 285.
Barber	115	13	8.1	Arch. Pediat., Nov., 1902.
Barr	169	42	24.2	Brit. Med. Jour., 1900, i, p. 1397.
Bartels	161	21	13.0	Ann. d. Charité, vii, p. 234.
Barthez	212	2	1.0	Bull. de l'Acad de Méd., 1862, xxvii, p. 676.
Bary	3,272	684	21.0	Eichhorst's Spec. Path. u. Therap., Wien, 1896, i, p. 511.
Basel Hospital	922	213	23.1	Korani, Kleba, III. Med. Jour., Dec., 1903, p. 488.
Basel	8	1	12.5	Gaz. d. Ospedal., 1896, xvi, p. 713.
Bauer	109	21	19.3	Berichte d. med. Klinik, München, 1878.
Baumgärtner	30	3	10.0	Lungenentzündung, Stüttgart, 1850.
Becquerel	38	23	82.0	Emiss. du Sang, Paris, 1838.
Bell	36	0	0.0	Braithwaite's Retrospect., Jan., 1859, p. 71.
Bell	81	4	5.0	Ranking's Abst., No. 28, p. 92.
Bennett	153	5	3.3	Practitioner, May, 1869, p. 267.
Berliner Charité	567	116	19.8	Annalen, 1874-5, Berl., 1876-7
Berne, In 1762	172	95	55.3	Smith, XX Century Practice, xv, p. 97.
Bertozalo	6	0	0.0	Gaz. d. Ospedale, 1903, No. 8.
Besnier	2,100	750	36.0	Lepine's Pneumonie, Wien, 1883.
Biermer	60	10	16.6	Kocher's Pneumonie, Würzb., 1866.
Billings	82,358	16,311	20.0	Allbutt's Syst. Med., 1896, i, p. 15.
Billings, J. S., Jr.	22	10	45.4	Johns Hopkins Hospt. Bull., v, p. 105.
Bird	20	0	0.0	Bouchet's Dis. Chest, Lond., 1865, p. 320.
Bishop	5	2	40.0	Med. News, March 8, 1902, lxxx, p. 477.
Bleuler	228	44	19.3	Inaug. Dissert., Zürich, 1865.
Bondi	22	3	13.6	Tomasini's Mod. Cur. Pulmonite, Napoli, 1899.
Bormans	12	1	8.3	Glor. d. Acad. d. Med. d. Torino, July, 1901.
Boston City Hosp.	8,339	2,683	32.2	Person. Com. Dr. Rowe (1865-1904).
Bouillaud	173	21	12.1	Dict. de Méd., Paris, 1835.
Bouillaud	102	12	12.0	Sturges' Pneumonia, Lond., 1876, p. 206.
Boyce	5	1	20.0	Pittsb. Med. Rev., 1894, viii, p. 148.
Bozzolo	5	1	20.0	Lambert, Jour. Am. Med. Assoc., 1900, xxxiv, p. 900.
Bragagolo	54	4	7.4	Gaz. d. Osped., 1903, xxiv, No. 89.
Branders	1	0	0.0	Arch. Pediat., 1899, xvi.
Brandes	142	30	21.1	Virchow's Arch., xv, p. 210.
Branthomme	2	1	50.0	Rev. d. Méd., April, 1896.
Brenchley	12	0	0.0	Lancet, 1890, i, p. 1425.
Briquet	129	17	13.2	Ranking's Abst. No. 28, p. 92.
British army	4,094	513	12.5	Personal Com. Dir. Gen. Med. Serv. (1894-98).
British army	5,685	399	7.0	LaRoche, Pneumonia, Phila., 1854, p. 417.
British army	12,271	413	3.5	Simpson Homeopathy, Phila., 1854, p. 117.
British Med. Assoc	1,065	192	18.0	Collec. Invest. Rec., Lond., 1884, ii.
British Med. Jour.	81	18	22.2	1895, i, p. 360, and 1896, i, p. 1229.
British navy	3,099	136	4.0	Mercer, Med. Rec., Feb. 29, 1896, p. 295.
Burkhard	120	2	1.6	Ranking's Abst. No. 28, p. 92.
Burt	6	0	0.0	Med. Rec., Jan. 2, 1904, lxv, p. 14.
Butry	20	9	45.0	Arch f. k. Med., xxix, p. 193.
Cabot	57	16	28.1	Bost. Med. and Surg. Jour., Aug. 3, 1893, p. 117.
Cabot	72	7	10.0	Bost. Med. and Surg. Jour., cxxx, No. 12.
Cacciuniga	60	3	5.0	Bull. d Assoc. Sanitat., Milan, I No. 9.
Campbell	38	2	5.3	Jour. Am. Med. Assoc., 1897, xxxix, p. 103.
Canaliz. Werke	14	3	21.4	Bericht, Berl., 1895.
Canby	4	0	0.0	Maryl. Med. Jour., March, 1900, p. 113.
Cantieri	20	2	10.0	Clin. Med. Ital., 1898, xxxvii, p. 689.
Capri	1	0	0.0	Sieroterapia, 1898, iii, p. 41.
Carmichael	142	0	0.0	Lancet, 1898, i, p. 1331.
Carriere	16	1	6.6	Rev. d. Méd., Nov., 1898.
Caruso & Stagnitta	2	0	0.0	Serioterapia, 1898, iii, p. 41.
Caton	129	39	30.0	Lancet, 1884, ii, p. 135.
Cecil	10	9	90.0	Am. Pract. and News, 1895, xix, p. 417.
Charity Hosp., N. O.	3,969	1,508	38.5	Osler, Univ. Mag., Nov., 1888.
Chase	39	2	5.0	Bost. Med. and Surg. Jour., 1898, cxl, p. 348.
Chase	45	3	6.6	Bost. Med. and Surg. Jour., April 13, 1899.
Chatelaine	39	20	52.0	Jour. de Méd. de Brux., 1870
Chatelaine	26	10	38.5	Eichhorst, Op. cit., p. 511.
Chomel	383	60	15.7	Pneumonie, Leipzig, 1841, p. 305.
Churton	127	19	15.0	Lancet, 1890, ii, p. 133.
Chvostek	200	36	17.2	Oester. Zeitschr. f. prakt. Heilk, 1867, No. 26, p. 43.
Cincinnati Bd. Health	260	50	19.2	Reports, 1873 4-5.
Cincinnati Hosp.	2,336	886	38.0	Personal Com. Registrar, 903.
Cochran	93	30	32.3	Med. Rec., Nov. 18, 1893, p. 664.
Cohn	57	24	42.0	Ranking's Abst., No. 28, p. 92.
Coleman	25	3	12.0	Inaug. Dissert., Würzb., 1886, p. 13.
Colin	74	4	5.2	Méd. Mil., Paris, 1853.
Colles	517	116	22.4	U. S. Naval Rpts., 1881, p. 414.
Constantinesco	816	17	2.1	Inaug. Dessert.
Cook Co. Hosp.	134	49	37.3	Report, 1st half, 1890, p. 36.
Cook Co. Hosp.	1,117	536	48.0	Private Com. Asst. Warden (1903).
Cooke	2	0	0.0	Brit. Med. Jour., 1899, i, p. 1278.
Couldrey	10	1	10.0	Lancet, 1888.
Coupland	1,010	192	19.0	Pre-Smith, Allbutt's Syst. Med., vi, p. 136.
Crandall	2	1	50.0	Arch. Pediat., Dec., 1898.
Croce	610	98	16.0	Arch. f. klin. Med., xxxvIII, p. 554.
Croce	1	0	0.0	Gaz. d'Osped., 1898, xix, p. 375.
Crombie	22	1	4.6	Pract., Apr., 1893, p. 269.
Cummins	30	0	0.0	Texas Med. Jour., Dec., 1901.
Dagnini & Silvani	25	15	60.0	Serioterapia, 1899, iii, p. 7.
Dalton	124	45	36.3	St. Louis Med. Rev., Mar. 30, 1889, p. 353.

TABLE SHOWING CASE MORTALITY OF PNEUMONIA.—Continued.

Observer.	Cases.	Deaths.	Per Cent.	Reference.
Davis	15	1	6.6	Cin. Lan. & Clin., July 15, 1890, p. 9.
Dawe & Austin	70	32	45.7	Lancet, 1904, i, p. 496.
De Bordes	90	19	21.0	Neederl. Weekb. v. Genes., Jan., 1855.
Demarara Hosp	199	63	31.6	Crombie, Op. cit. (1889-91).
De Renzi	32	3	9.4	Gaz. d. Osped., Feb. 13, 1898.
De Renzi	14	2	14.3	Rev. clin. e. Therap., 1896, xvIII, p. 503.
De Renzi	15	1	6.6	Policlinico, Oct. 31, 1896.
Derpmann	655	117	17.9	Inaug. Dissert., Bonn, 1885, p. 19.
Dessau	45	0	0.0	Jour. Am. Med. Assoc., Nov. 20, 1890, p. 791.
Dick	2	0	0.0	Brit. Med. Jour., 1904, i, p. 105.
Dietl	380	53	14.0	Der Aderlasse in d. Lungenentz., Wien, 1848, p. 105.
Dietl	750	69	9.1	Wiener med. Wochenschr., 1852.
Dingle	1,126	405	36.0	Rpt. Med. Officer, Middlesborough, 1899.
Doubleday	252	112	44.4	Med. Rec., Mar. 28, 1885, p. 343.
Drasche	75	16	21.9	Berichte, 1894-99 (Vienna).
Drummond	8	2	25.0	Brit. Med. Jour., 1898, II, p. 939.
Duke	8	0	0.0	Lancet, 1904, i, p. 1016.
Dukes	44	1	2.3	Lancet, 1896, i, p. 840.
Dupuy	70	23	33.2	Prog. Méd., 1897, Nos. 41-42.
Dutcher	50	1	2.0	Cin. Lan. & Obsv., Jan., 1861, p. 10.
Edinburg Infirmary	60	4	5.0	Reports, 1839 and 1865.
Edinburg Infirmary	1,716	306	17.8	Osler, Op. cit.
Eichberg	90	17	18.8	Jour. Am. Med. Assoc., 1897, xxix, p. 108.
Eichberg	6	1	16.6	Am. Med., 1902, III, p. 690.
Eichhorst	1,918	367	19.1	Spec. Path. u. Therap., Wien, 1894, i, p. 510.
Elfstrom	9	2	22.5	N. Y. Med. Jour., 1898, lxviii, p. 556, and Sept. 30, 1899, p. 486.
Elfstrom	14	3	21.4	Brooklyn Med. Jour., 1900, xiv, p. 603.
Elisabeth Hospital	1,253	314	25.1	Berichte, 1894-99 (Vienna).
Emmerich	161	46	28.6	Arch. f. Hygien, 1884, II, No. 1.
Englemann	15	4	26.7	Bost. Med. and Surg. Jour., 1897, cxxxvii, p. 311.
Ewart and Percival	6	5	83.3	Brit. Med. Jour., 1900, II, p. 900.
Fanoni	32	3	9.4	N. Y. Med. Jour., 1898, lxvii, p. 646.
Fanoni	18	1	5.5	Pediat., 1900, ix, p. 393.
Feldhausen	56	7	12.5	Inaug. Dissert., Göttingen, 1879, p. 15.
Fenwick	990	233	23.5	Lancet, Jan. 31 and Feb. 7, 1891.
Ferguson	5	3	60.0	Jour. Am. Med. Assoc., 1898, xxx, p. 986.
Ferguson	106	6	5.7	Smith, XX Cent. Prac., xv, p. 97.
Ficke	108	1	0.9	Wiener med. Woch., 1893, No. 39.
Fieandt	106	3	2.8	Duodecim., Helsingfors., 1889.
Filk	61	1	1.6	Wiener med. Woch., 1893, Nos. 8 and 9.
Findelanstalt	152	117	77.0	Bericht, Wien, 1850.
Fisher	4	4	100.0	Am. Jour. Med. Sci., 1901, cxxii, p. 193.
Fisher	26	1	4.0	Med. Rec., July 28, 1888, p. 94.
Fismer	145	13	9.0	Arch. f. k. Med., 1873, xi, p. 391.
Fleischmann	239	14	5.8	Sturges, Op. cit., p. 329.
Flint	133	35	26.3	N. Y. Med. Jour., Mar., 1875, p. 290.
Flint	12	2	16.6	Prac. Med., 1868.
Fox	1	0	0.0	Sem. Méd., 1891, xi, p. 440.
Folkmann	125	26	20.8	Inaug. Dissert., Erlangen, 1847, p. 39.
Folsom	391	132	33.7	Med. News, 1897, lxx, p. 28.
Forget	32	7	2.2	Gaz. Méd. de Strasb., 1860.
Fox	55	8	14.5	Reynold's Syst. Med., Phila., 1880, II, p. 204.
Francis Joseph Hospital	1,118	289	25.8	Berichte, 1894-99 (Vienna).
Fränkel	1,015	229	27.6	Lungenkrankh., 1902.
Fränkel & Reiche	1,130	219	19.4	Zeitschr. f. k. Med., 1894, xxv.
Franque	872	262	30.0	Statistik d. Pneumonie, Würzb., 1855.
Fräntzel	100	0	0.0	Eichhorst, Op. cit., p. 511.
Fraser	4,846	1,136	23.4	Glasgow Med. Jour., May, 1902.
Fricke	179	16	9.0	Inaug. Dissert., Gött., 1886, p. 26.
Frohmüller	12	0	0.0	Deutsche Klinik, 1855.
Funck	941	102	10.8	Inaug. Dissert., Griefswald, 1868.
Fussell	132	22	16.4	Med. News, 1898, lxxii, p. 297.
Gallimart	13	10	77.0	Pneumonie, etc., Paris, 1877.
Gandini	25	0	0.0	Ranking's Abst., No. 28, p. 92.
Gaston	63	15	23.8	Med. News, Aug. 5, 1893, p. 152.
Geissler	421	87	20.7	Arch. d. Heilk., 1861, II, p. 115.
Gentile	40	1	2.5	Læennec, Diat. Chest, N. Y., 1830, p. 270.
Gerbrecht	45	29	64.5	Inaug. Dissert., Würzb., 1885.
Gerhard	41	1	2.5	Am. Jour. Med. Sci., xiv, p. 328.
Gerhardt	6	0	0.0	Thüring. Corresp.-bl., 1873, No. 11.
German Army	42,467	1,524	3.6	Hermann, Lungenentz., 1880.
German Army	19,149	735	3.8	Personal Com. Surg. Gen. (1896-1901).
Goldsborough	9	2	22.2	Jour. Am. Med. Assoc., 1902, xxxviii, p. 1681.
Goodhart	120	25	20.8	Osler, Prac. Med., 1899, p. 131.
Graf	46	13	28.2	Inaug. Dissert., Würzb., 1876.
Graham	5	1	20.0	Lancet, 1903, i, p. 1031.
Gray	6	1	16.7	Med. Rec., 1902, lxi, p. 527.
Green	23	1	4.4	Med. Rec., July 20, 1889, p. 66.
Grisolle	748	183	24.4	Traité de la Pneumonie, Paris, 1864.
Grund	16	0	0.0	Pneumonie, Würzb., 1891.
Gründler	73	4	5.5	Deutsche med. ærtzl. Zeit., 1875, iv, 2, p. 79.
Gualdi	39	2	5.1	Lancet, 1884, II, p. 27.
Guigeot et Deguy	12	0	0.0	Sem. Méd., Mar. 15, 1897.
Gurit	30	15	50.0	Ann. Surg., Feb., 1896.
Haedke	4	3	75.0	Deutsche med. Woch., 1898, p. 220.
Hall	70	24	34.3	Phila. Med. Jour., 1901, viii, p. 791.
Halla	14	2	14.3	Präger Zeitschr. f. Heilk., 1883, iv, p. 198.
Hamilton	9	1	11.1	Brit. Med. Jour., 1899, i, p. 1214.
Handford	31	9	23.1	Lancet, 1900, II, p. 170.
Hartnett	1	0	0.0	Brit. Med. Jour., 1897, i, p. 1279.
Hartshorn	11,175	1,117	10.0	Med. News, Apr. 7, 1888.
Hay	150	61	40.6	Lancet, Nov. 28, 1903.
Hayem	77	16	21.0	Wiener med. Bl., 1895, p. 682.
Hawkins	242	9	3.7	Practitioner, July, 1893, p. 19.
Hegele	40	0	0.0	Kissel, Pneumonie, 1852, p. 149.
Heibling	62	5	8.0	Canstatt's Jahresb., 1850.
Hellis	831	173	22.0	Clin. Med., Paris, 1824.
Hendley	935	93	9.9	Brit. Med. Jour., 1895, i, p. 276.
Henry	9	3	25.6	L'Union Méd., 1847, No. 127.
Herard	40	8	20.0	Temp. in Pneumonie, Paris, 1885.
Hermann	712	45	6.5	Lungenentsündung, München., 1880, pp. 13-42.
Hirst	7	3	42.8	Obstetrics, 1898, p. 617.
Hjaltelin	80	3	3.7	Edinb. Med. & Surg. Jour., Apr., 1864.
Hœpfel	15	1	7.3	Therap. Monatschr., Apr., 1892.
Holdheim	5	0	0.0	Deutsche med. Wochenschr., 1896, xxii, p. 85.
Holmes	1	1	100.0	Jour. Am. Med. Assoc., 1901, xxxvi, p. 1544.
Holt	198	37	19.0	Med. Rec., Feb. 14, 1885, and Apr. 7, 1888.
Holwede u. Münich	15	1	6.6	Arch. f. Kinderh., II.

TABLE SHOWING CASE MORTALITY OF PNEUMONIA.—Continued.

Observer.	Cases.	Deaths.	Per Cent.	Reference.
Homburger	25	9	36.0	Inaug. Dissert., Strassb., 1879, p. 71.
Home for Aged	262	123	60.9	Mauerbach (Wien), for 9 years.
Hourmann et Dechambre	160	76	70.0	Arch. Gén. de Méd., 1836.
Howard	170	10	6.0	Osler, Op. cit., p. 131.
Huber u. Blumenthal	14	2	14.3	Berl. klin. Woch., 1897.
Hulava	12	0	0.0	Deutsche med. Zeit., 1855.
Hughes	14	5	35.7	Trans. Pan-Am. Med. Cong., 1893, i, p. 324.
Hughes and Carter	1	0	0.0	Therap. Gaz., Oct. 15, 1892, xvi, p. 698.
Huss	2,710	375	13.9	Lungenentzündung, Leipz., 1861, p. 94.
Ingals	338	123	36.4	Jour. Am. Med. Assoc., 1902, xxxix, p. 1301.
Ingals	22	10	45.8	Med. News, Oct. 17, 1903, p. 727.
Italian Army	12,442	1,874	15.6	Grieco, Private Com. (1890-1899).
Ivanoff	22	0	0.0	Medityna, 1894, No. 4, p. 29.
Jackson	51	8	15.0	N. Y. Med. Jour., Mar., 1875, p. 290.
Jackson	19	2	10.5	Therap. Gaz., Nov., 1894, p. 725.
James	28	5	17.9	Am. Jour. Med. Sci., July, 1877.
Janson	10	1	10.0	Hygiea (Stockholm), 1892, p. 368.
Johns Hopkins Hospital	431	96	22.2	Private Com. Supt. Hurd (1889-1903).
Jones	32	10	31.3	Med.-Chir. Rev., Jan., 1861.
Jones	218	67	30.7	Jour. Am. Med. Assoc., Aug. 7, 1886, p. 144.
Judrin	30	1	3.3	Thèse de Paris, 1824, p. 17.
Juergensen	567	73	12.7	Pneumonie, Tüb., 1884.
Kelly	1	1	100.0	Jour. Am. Med. Assoc., 1900, xxxv, p. 599.
Kerchensteiner	160	46	28.7	Bayer. ärztl. Intelligenzb., 1881, xxvlii, p. 215.
Kissel	301	19	6.3	Pneumonie, Ellenburg, 1852, p. 289-91.
Klemperer	6	0	0.0	Berl. klin. Woch., 1891, xxviii, p. 869.
Klemperer	20	0	0.0	Wiener med. Woch., 1892, xlii, p. 882.
Kocher	60	5	8.3	Pneumonie, Würzb., 1866.
Kohn	32	12	37.5	Berl. k. Wochenschr., 1896, xxxiii, p. 1124.
Kopilnski	10	1	10.0	Maryl. Med. Jour., 1899, xli, p. 179.
Krause	59	9	15.3	Pneumonie, Leipzig, 1868.
Kreider	6	2	33.3	Med. Rec., Sept. 7, 1895, p. 260.
Krügerhausen	71	1	1.4	Prakt. Fragmenten, Coblenz, 1845.
Kühn	58	8	13.8	Arch. f. k. Med., 1878, xxi, p. 364.
Lacage	42	1	2.5	Ranking's Abst., No. 28, p. 92.
Laennec	94	18	19.1	Dis. Chest, N. Y., 1830.
Laennec (A.)	40	6	15.0	Jour. Soc. Méd. la Loire, 1825.
Lakeside Hospital	16	3	18.7	Report, 1904 (Chicago).
Lambert	9	1	11.1	Med. News, lxxvi, p. 559.
Lambert	12	3	25.0	Jour. Am. Med. Assoc., 1900, xxxiv, p. 900.
Landerer	50	10	20.0	Wiener med. Presse, 1893, p. 730.
Landrieux et Legros	10	2	20.0	Rev. Gén. de Clin., etc., 1901, xv, p. 785.
Latta	257	52	20.2	Osler, Univ. Med. Mag., Jan., 1889.
Latta	10	0	0.0	Glor. d. r. Acad. di Med. di Torino, 1893, xli, p. 33.
Laveran	235	46	19.5	Mal des Armées, Paris, 1875, p. 28.
Lebert	898	135	15.0	Klinik d. Brustkrankh., i.
Legnani	3	0	0.0	Rev. Clin., 1893, p. 31.
Leszinsky	245	25	10.2	Zelmssen, Pneumonie, 1862, p. 236.
Leudet	40	3	7.5	Bull. Gén. de Thérap., 1863.
Liebermeister	52	29	55.7	Ziemssen's Handb.
Liegel	72	0	0.0	Wiener med. Woch., May 7, 1898, p. 885.
Liszt	46	0	0.0	Pester med.-chir. Presse, 1896, xxxii, p. 75.
Löbel	57	10	17.5	Bericht d. Rud. Stift., Wien, 1867.
Loewenthal	12	0	0.0	Centralb. f. Therap., Nov., 1891.
Loomis	255	87	34.0	N. Y. Med. Gaz., Apr. 30, 1881, p. 154.
Louis	78	28	32.2	Rech. sur la Effets de la Saignée, Paris, 1835.
Louis	75	18	24.0	Phthisis, Boston, 1840, p. 440.
MacArthey	120	2	1.7	Med. Rec., 1896, i, p. 397.
MacGregor	4,027	287	7.0	Med. Notes on Crimean War.
Maldenesco	101	18	18.0	Sem. Méd., 1896, lxxiv, No. 19.
Manges	58	15	26.0	Med. News, lxvi, p. 115.
Margotta	1	1	100.0	Glor. Med. d. e. Esercito, Roma, 1899, p. 796.
Marie	8	0	0.0	Bull. Soc. Méd. d. Hôp. d. Paris, May 17, 1900.
Marion	76	40	52.6	Am. Pract. & News, 1895, xix, p. 415.
Markham	392	56	14.3	Gulstonian Lectures, Lond., 1866.
Marone	1	0	0.0	Rif. Med., 1898, i, p. 582.
Mason	50	23	46.0	Conn. Bd. Health Rpt., 1885, p. 338.
Mass. Gen. Hosp.	2,486	657	26.4	Townsend and Coolidge, Am. Climat. Assoc., 1889, and Person. Com. Supt., 1824-1903.
Massalongo	10	3	30.0	Rif. Med., 1898, ix, p. 246.
Matton	38	10	25.3	Jour. de Med. de Brux., 1872, p. 412.
Mays	299	10	3.3	Bost. Med. & Surg. Jour., Oct. 24, 1895, p. 429; Med. News, 1897, lxx, p. 124.
McCrea et al.	486	104	21.2	Mont. Med. Jour., 1904, xxxiii, p. 19.
McManus	62	2	3.3	Med. Rec., Sept. 8, 1888, p. 260.
Medical News	5	5	100.0	1899, lxxiv, p. 88.
Mercer	538	28	5.2	Med. Rec., Feb. 29, 1896.
Mercier	70	29	40.1	Bull. Soc. Anat., xli, p. 279.
Mercy Hospital	492	166	33.7	Person. Com.
Meyer	12	2	16.6	Folsom, Op. cit., p. 29.
Meyer	500	94	18.9	Mt. Sinai Hosp. cases.
Miller	14,857	14,411	97.0	Am. Jour. Med. Sci., June, 1894.
Mitchell	6,110	1,481	24.1	Edinb. Med. & Surg. Jour., Nov., 1857, p. 404.
Monetti	29	1	3.5	Gaz. d. Osped., Mar. 29, 1903.
Montreal General Hospital	1,012	207	20.4	Osler, Univ. Med. Mag., Nov., 1888.
Montgomery	20	6	30.0	Ill. Med. Jour., Feb., 1904, v, p. 672.
Morano	15	2	13.3	Rif. Med., 1899, Nos. 72-73.
Morehead	104	43	26.7	Rankin's Abst., No. 28, p. 92.
Morrill	195	7	3.6	Bost. Med. & Surg. Jour., 1894, cxxx, p. 541; Arch. Pediat., 1897, xiv, p. 730.
Morris	35	11	31.4	Lancet, 1891, i, p. 519.
Mosler	40	0	0.0	Lungenentzündung, Griefswald, 1887.
Mueller	10	0	0.0	Ranking's Abst., No. 28, p. 92.
Mulr	4	1	25.0	Med. Rec., 1901, lx, p. 433.
Münch. Krankenh.	234	43	17.9	Ann., 1874-75-78.
Musser	135	56	28.7	Nothnagel's Encycl., Dis. Lungs., 1902, p. 505.
Nelsser	3	0	0.0	Deutsche med. Woch., 1892, xviii, p. 503.
Neuhoff	12	2	16.6	Med. Rec., 1901, lix, p. 724.
Neumann	7	2	28.6	Berl. k. Woch., 1888, p. 119.
New York Hospital	1,188	348	31.0	Reports, 16 years.
Oppolzer	32	5	15.8	Rankin's Abst., No. 28, p. 92.
Orr	18	1	5.5	Med. Rec., Sept. 27, 1902, p. 515.
Osler	149	42	28.2	Am. Jour. Med. Sci.,1897, cxlii, p. 1—Nat. Med. Rev., vii, p. 177
Pane	66	6	9.1	Rif. Med., 1897, pt. ii, p. 40—1898, No. 17.
Paton	96	2	2.2	Am. Jour. Med. Sci., Oct., 1870, p. 375.
Patton	63	36	57.1	Jour. Am. Med. Assoc., Oct. 16, 1886.
Pause	169	26	15.3	Lungenentzündung, Leipz., 1861, p. 154.
Peacock	100	12	12.0	St. Thomas' Hosp. Rpts., v, p. 18.

TABLE SHOWING CASE MORTALITY OF PNEUMONIA.—Continued.

Observer.	Cases.	Deaths.	Per Cent.	Reference.
Penslee	29	3	10.0	Chic. Med. Stand., Oct., 1889, p. 126.
Pelletan	75	11	14.6	Mém. de l'Acad. de Méd., viii, p. 373.
Pendlebury Hospital	231	3	1.3	Reports, Manchester, 1881-86.
Pennsylvania Hospital	929	241	26.2	Osler, Op. cit., and Eichberg, Am. Med., iii, p. 691.
Pepper	1,485	173	11.6	Bost. Med. & Surg. Jour., Apr. 24, 1890.
Pepper	2,471	324	13.1	Med. News, July 5, 1890.
Petrescu	825	17	2.0	Bull. d. Thérap., cxxii, p. 120.
Piorry	30	2	6.6	Ranking's Abst., No. 28, p. 92.
Pollenctov	37	3	8.1	La Méd. Mod., 1892, xiii, p. 159.
Popham	30	2	6.6	Brit. Med. Jour., Dec. 28, 1867.
Porteous	50	0	0.0	N. Y. Med. Jour., May 11, 1895, p. 594.
Powell	6	1	16.6	Brit. Med. Jour., 1895, ii, p. 1149.
Prantois	59	13	21.7	Arch Gén. de Méd., 1892, pp. 274, 452.
Pribam u. Robertscheck	10	0	0.0	Prager Vierteljahrschr., 1869.
Prince Edward's Island	546	40	7.3	Med. Rec., July 13, 1889, p. 44.
Provident Hospital, Chic	52	12	23.1	Reports, 3 years.
Prus	129	77	59.0	Mém. de l'Acad. de Méd., 1840, viii, p. 13.
Putnam-Jacobi	14	2	14.3	N. Y. Med. Jour., June-July, 1879.
Pye-Smith	434	111	25.5	Allbutt's Syst. Med., 1898, vi, p. 136.
Rail	35	7	20.0	Inaug. Dissert., Stüttg., 1887, p. 5.
Rankin	5	1	20.0	Lancet, 1895, ii, p. 456.
Rasori	832	173	22.0	Arch. Gén. de Méd., 1824.
Raw	1,047	245	23.4	Lancet, 1900, i, p. 460.
Raw	817	196	24.0	Brit. Med. Jour., 1891, ii, p. 1803.
Raymond	1	0	0.0	Arch. Gén. de Méd., Mar., 1901, p. 99.
Recupito	1	0	0.0	Riv. Clin. Terap., Napoli, 1899, ii, p. 79.
Reece	35	20	57.3	Brit. Med. Jour., 1895, ii, p. 1314.
Reed	64	2	3.1	Therap. Gaz., Apr. 15, 1892.
Renier	24	1	4.1	Wiener med. Woch., 1893, No. 39.
Reuf	94	5	5.3	Ranking's Abst., No. 28, p. 92.
Reyburn	202	14	6.9	Am. Jour. Med. Sci., Apr. 1866, p. 368.
Ricau	43	12	28.0	Thèse de Paris, 1874.
Rietz	392	50	12.8	Inaug. Dissert., Jena., 1868, p. 19.
Rilliet et Barthez	81	77	95.0	Mal. d. Enf., Paris, 1838.
Ringrose	20	3	15.0	Lancet, 1897, ii, p. 1451.
Robinson	32	0	0.0	Lancet (Am. Ed.), 1852, ii, p. 288.
Robinson	141	101	71.6	Med. Rec., 1898, liii, p. 253.
Rochester	168	21	12.5	Jour. Am. Med. Assoc., 1901, xxxvii, p. 1237.
Rodini	2	0	0.0	Cong. Int. Med. Roma, 1899, p. 378.
Rodman	98	25	25.5	Am. Jour. Med. Sci., Jan., 1876.
Rosenow	30	12	40.0	Jour. Infec. Dis., 1904, i, p. 280.
Roosevelt Hospital	367	142	38.7	Eichberg, Am. Med., iii, p. 691.
Roth	237	45	18.9	Statistik d. Pneumonie, Würzb., 1860.
Routh	193	9	4.5	Lancet (N. Y. Ed.), 1855, ii, p. 36.
Rudolph-Stiftung	3,026	775	25.6	Berichte, 1865-75, and 1894-99.
Salawa	15	0	0.0	Schmidt's Jahrb., 1855, lxxxvi, p. 30.
Salem Hospital	2	1	50.0	Repts., 1877, p. 8.
Sampson	909	209	23.0	Lancet (N. Y. Ed.), 1851, ii, p. 36.
Samter	331	39	11.0	Inaug. Dissert., Breslau, 1881.
Schapira	264	42	16.0	Inaug. Dissert., Würzb., 1877.
Scheef	547	72	13.1	Inaug. Dissert., Tüb., 1882, p. 15.
Schlesinger	335	54	16.1	Inaug. Dissert., Berlin, 1873, p. 23-24.
Schlesinger	173	7	4.0	Arch. f. Kinderh., 1897, xii, p. 266.
Schmidt	152	20	13.0	Ranking's Abst., No. 28, p. 92.
Schmidt	17	2	11.8	Berl. k. Woch., 1883, No. 23.
Schmidtmann	68	2	3.0	Hufeland's Jour., iii, p. 441.
Schnröder	1,277	183	14.3	Inaug. Dissert., Kiel, 1882.
Schultz	94	8	7.9	Am. Pract., Sept., 1879.
Schultz	238	16	6.5	Jour. Am. Med. Assoc., July 30, 1886, p. 119.
Scott & Montgomery	67	10	14.9	Therap. Gaz., Dec., 1903.
Scotter	29	18	62.1	Lancet, 1890, ii, p. 1170.
Sears	13	5	38.5	Bost. Med. and Surg. Jour., 1901, cxlv, p. 639.
Sears and Larrabe	949	341	35.9	St. Paul Med. Jour., July, 1902.
Sebring	100	1	1.0	Med. Rec., Apr. 22, 1899, p. 558.
Semaine Méd.	104	7	6.9	1892, xii, p. 21.
Serent	23	11	48.0	Policlinico, 1897, No. 22.
Sigmund	743	104	14.0	Ranking's Abst., No. 28, p. 92.
Silva	5	2	40.0	Cong. Med. Intern., Roma., 1899, p. 218.
Sittmann	16	6	37.5	Arch. f. k. Med., liii, p. 323.
Skoda	555	74	13.3	Allgem. Wiener m. Zeit., 1863.
Smith	108	3	2.8	Schmidt's Jahrb., cxxxii, p. 321.
Smith	5	0	0.0	Brit. Med. Jour., 1895, i, p. 1029.
Smith	458	154	33.2	XX Cent. Practice, xv, 1900, p. 79.
Smith	223	66	29.6	Med. Rec., 1896, xlix, p. 649.
Smith	60	17	28.6	Med. News, 1898, lxxiii, p. 817.
Snively	113	13	11.5	Jour. Am. Med. Assoc., 1901, xxxvi, p. 1062.
Speck	50	12	24.4	Inaug. Dissert., Marb., 1870, p. 2.
Spence	228	48	21.0	Med. Rec., July 1, 1893, p. 1.
Spalverini	9	0	0.0	Bull. Acad. Med. Roma, 1900, xxvi, p. 79.
Spurrell	6	6	100.0	Brit. Med. Jour., Dec. 25, 1897, p. 1848.
Stecher	656	128	19.5	Inaug. Dissert., Leipz., 1866, p. 14.
Steffan	94	13	13.8	Klinik d. Kinark., Berl., 1865.
Steinmetz	83	24	29.0	Ohio Med. Rec., June, 1877, p. 34.
Stephan	25	9	36.0	Needrl. Weekbl., 1888.
Stephanie Hospital	36	3	8.3	Berichte, 1894-99 (Vienna).
Stephens	54	4	7.4	Therap. Gaz., 1901, xxv, p. 731.
Stephenson	34	19	56.0	Lancet, 1896, i, p. 1630.
Stevens	78	5	6.5	Am. Jour. Med. Sci., Oct., 1870, p. 376.
Stierlin	150	7	4.6	Berl. k. Woch., 1870, No. 26.
Stoahmi	30	0	0.0	Ranking's Abst., No. 28, p. 92.
Stockholm Mil. Hospital	670	49	7.3	Huss, Op. cit., p. 86.
Stortz	1,432	258	18.5	Inaug. Dissert., Würzb., 1884.
Strinower	9	0	0.0	Brit. Med. Jour., Dec. 24, 1891.
Strong	20	1	5.0	Med. Rec., Mar. 16, 1889, p. 291.
Sturgos	452	35	7.7	Pneumonia, Lond., 1876.
St. Ann's Child. Hospital	28	8	28.5	Wien, 1850.
St. Joseph's Hospital	17	4	22.0	Personal Com. (1895-6) (Chicago).
St. Luke's Hospital	306	106	34.6	Personal Com. (1892-1903) (Chicago).
St. Mary's Hospital	4	1	25.0	Report, 1870 (Quincy).
St. Michael's Hospital	29	4	13.0	Report, 1876 (Newark).
St. Rochu's Hospital	260	60	23.1	Berichte, 1894-99 (Vienna).
St. Thomas' Hospital	708	143	20.2	Rpts., 1891, xix, p. 247 (London).
Sweeney	1	0	0.0	Trans. Luzerne Co. Med. Soc., ix, p. 147.
Talamon	7	6	85.7	Med. Week, Mar. 20, 1895.
Talamon	50	7	14.0	Méd. Mod., Feb. 27 and Mar. 6, 1901, pp. 65-73.
Tate	46	12	26.1	Clin. Lan. and Clin., 1895, xxxiv, p. 539.
Taylor	25	1	4.0	Med. News, 1902, lxxxi, p. 880.
Thiele	6	0	0.0	Deutsche Klinik, 1855.

TABLE SHOWING CASE MORTALITY OF PNEUMONIA.—Continued.

Observer.	Cases.	Deaths.	Per Cent.	Reference.
Thielmann	110	12	11.0	Ranking's Abst., 1858, xxviii, p. 99.
Thomas	106	3	2.8	Am. Jour. Med. Sci., Oct., 1870, p. 376.
Thomas	65	14	21.5	Arch. d. Heilk., iv, No. 2.
Thomas	68	1	1.4	Richm. & Louisv. Med. Jour., 1876.
Thornton	3	2	66.6	Brit. Med. Jour., 1894, ii, p. 125.
Tommasini	115	14	12.1	Peripneumonie, Bologne, 1817.
Tommasini	5	0	0.0	Sieroterapia, 1900, iv, p. 49.
Townsend	42	2	5.0	Jour. Am. Med. Assoc., Dec. 1, 1888, p. 789.
Tregagno epidemic	100	30	30.0	Deutsche m. Zeit., 1883, No. 41.
Trinidad Hospital	11	5	45.4	Crombie, Op. cit. (1889-91).
Trousseau	52	2	4.0	Ranking's Abst., 1858, xxviii, p. 99.
Tyler	6	1	16.7	Jour. Am. Med. Assoc., xxxvi, p. 1540.
U. S. Army	2,073	224	10.8	Hartshorn, Op. cit. (1840-59).
U. S. Army	77,335	20,116	26.1	Med. Hist. Rebellion, i, pt. 1 (1860-65).
U. S. Army	6,838	1,075	15.7	Person. Com. Surg. Gen. (1868-1902).
U. S. M. Hosp. Service	6,185	1,108	17.9	Reports Surg. Gen. 29 years.
U. S. Navy	398	37	9.3	Repts. Surg. Gen. (1879-80-81-82-86-88-1901)
U. S. Navy	797	108	13.5	Person. Com. Surg. Gen. (1890-1900).
Valleix et Vernois	128	127	99.2	Buchut, Dis. Child., p. 325.
Vandeboncour	17	0	0.0	Syracuse Acad. Surg., Oct. 22, 1901.
Van Zandt	1,154	56	4.9	Med. Rec., Oct. 18, 1902, lxii, p. 601.
Verenitap	23	1	4.3	Henle u. Pfeiffer's Zeitschr., 1851.
Victoria Ry. Hospital	316	53	16.7	Person. Com. Registrar (Montreal, 1894-1901).
Vienna General Hospital	25,427	6,212	24.4	Berichte (1840-1891 and 1893-1899).
Voght	56	4	7.0	Bull. gén. de Thérap., Jan., 1860.
Wagner	13	7	53.8	Contrastimulus, u. s. w., Berl., 1819.
Waller	81	9	11.1	Inaug. Dissert., Erlangen, 1877, p. 25.
Waller	119	33	27.7	Günsburg, Klinik d. Brustk, p. 532.
Walls	4	2	50.0	Jour. Am. Med. Assoc., 1901, xxxvii, p. 560.
Warbrick	7	6	85.7	Person. Com.
Warfwing	546	34	6.2	Eichhorst, Op. cit., p. 511.
Wassider	112	4	3.5	Ranking's Abst., 1858, xxviii, p. 99.
Waters	44	1	2.4	Dis. Lungs, p. 87.
Waters	59	2	3.4	Liverpool & Manchester Hosp. Rpts., iv.
Waters	151	11	7.3	Lancet, 1900, i, p. 469.
Weber	9	1	11.2	Med. Rec., 1901, lx, p. 681.
Weber	200	18	9.0	Phila. Med. Jour., 1900, vi, p. 596.
Wiesbecker	21	2	9.9	Münch. m. Woch., 1898, pp. 202, 238.
Wiesmayer	39	8	20.5	Zeitschr. f. k. Med., 1897, xxxii, p. 291.
Wesley Hospital	89	20	22.4	Repts., 1901-02 (Chicago).
West	1,633	353	21.6	Dis. Organs of Resp., Lond., 1902, i, p. 303.
Whitelegge	682	143	20.9	Allbutt's Syst. Med., 1896, i, p. 656.
Wieden Krankenh.	890	252	28.3	Berichte, Wien, 1876, u., 1894-99.
Wilbrandt	126	12	9.5	Inaug. Dissert., Rostock, 1862.
Wilcox	33	0	0.0	Med. News, 1901, lxxix, p. 638.
Wilheminie Hospital	517	110	21.3	Berichte, 1894-99 (Vienna).
Wilson	18	4	22.2	Jour. Am. Med. Assoc., 1900, xxxv, p. 895.
Wilson	38	8	21.1	Med. News, 1900, lxxix, p. 638.
Wilson	23	0	0.0	Phila. Med. Jour., 1900, v, p. 510.
Wilson	40	11	28.0	Med. News, 1901, lxxvi, p. 912.
Wilson and Page	18	6	33.3	Therap. Mon., July, 1901.
Wilson and Rosenthal	1	1	100.0	Therap. Mon., July, 1901.
Witte	505	25	5.0	Inaug. Dissert., Berl., 1877, p. 41.
Wittich	23	0	0.0	Ranking's Abst., 1858, xxviii, p. 99.
Woman's Hospital	4	0	0.0	Report, Phila., 1876, p. 12.
Woodson	20	2	10.0	Am. Pract., Mar., 1870, p. 289.
Wucherer	90	1	1.1	Ranking's Abst., No. 28, p. 99.
Wunderlich	237	25	10.6	Arch. f. Heilk., 1856, iii.
Wunderlich	50	8	16.0	Inaug. Dissert., Tüb., 1858, p. 31.
Zeigell	40	0	0.0	Satterthwaite, Med. News, Jan. 5, 1889.
Author	1,000	243	24.3	Jour. Am. Med. Assoc., Jan. 9, 1892, and unpublished.
Totals and average	465,400	94,826	20.4	

from his list as many of the fatal cases as can be possibly eliminated, in order that his percentage of cures may be raised.[1]

Not only is the mortality of pneumonia appalling, but it is steadily increasing. This fact is conclusively proven by the following curves constructed from the statistics of the Massachusetts General Hospital, the Boston City Hospital, the Cincinnati Hospital, the Glasgow Royal Infirmary and the Wiener Allgemeines Krankenhaus. The statistics of the United States Army are given as an example of the very uniform death rate which may be shown during a long term of years by some series of cases. It is fair to state, however, that the mortality rate of 15.7 per cent. shown by this series, 1868-1902, is nearly one-half greater than the 10.8 per cent. shown by the cases occurring in this army in the years 1840-1859.

The causes of death are the direct effects of pneumococcal activity. This fact I desire to emphasize. In the vast majority of cases death is due to a profound toxemia, in which case the gross anatomic lesions may be quite insignificant, or they may be of the most extensive and destructive character, or they may be of any intermediate grade; but whatever the extent and character of the demonstrable lesions, the fatal result must be laid to the door of the, as yet, intangible systemic pneumococcus intoxication.

Certain noticeable effects follow and are directly due to the introduction into the system of the pneumotoxin: it may be in infinitesimal quantity and diluted beyond computation, as, e. g., the profound chill, the raging fever, the lowered arterial tension, the disturbed balance

1. Formerly many writers considered pneumonia a disease of comparatively slight danger. Thus Bennett says that the mortality of uncomplicated cases, properly treated, should be practically *nil*, and this opinion was shared by Barthez, Joly, D'Espine, Waters, Wood, Hartshorn and others. Trousseau says that "generally speaking, there is a tendency to spontaneous recovery." Flint says that in uncomplicated cases "the intrinsic tendency is to recovery: indeed, recovery is not only the rule, but the exceptions are exceedingly infrequent." Gerhard affirms that the death-rate in private practice should not exceed 2 or 3 per cent. To be sure these opinions were not shared by all the writers of the day; as for example, Loomis says that "a disease in which death occurs in one out of five cases, should be classed among the very fatal diseases," and similar views are held by Copland, Watson, Drake, Sturges and others. As a rule the latest editions of the textbooks on practice which are in the hands of the great majority of American medical students estimate very fairly the dangerous character of the disease. Thus Osler says that "pneumonia is the most fatal of all acute diseases." Tyson says that it is the "most fatal of all infections of adults in temperate climates." Anders says that the death rate in hospitals is about 25 per cent.; in private practice about 15 per cent. Thompson places the mortality at 30 per cent. for hospital, and 8 to 15 per cent. for private practice. Philip, Mackenzie, West, Pye-Smith, Fitz, Aufrecht and Eichhorst all are aware of the real hazard of the pneumonic attack. Strümpell stands alone in his opinion that "pneumonia belongs to the benignant infectious diseases."

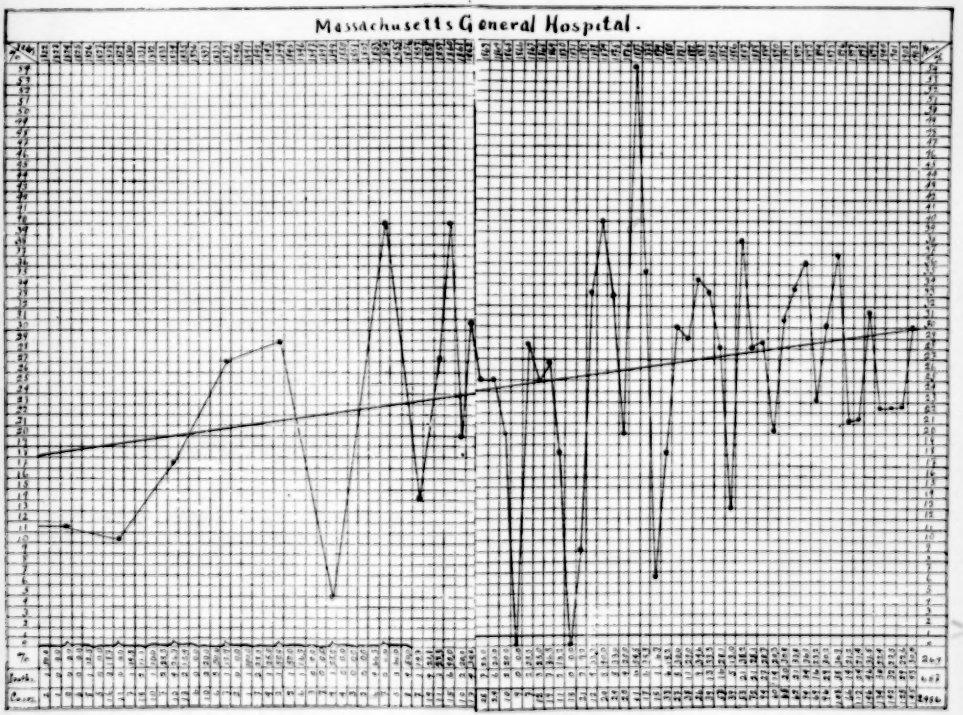
between constructive and destructive metamorphosis, the interference with the excretion of waste, etc. Other pathologic changes may be due to the effects of the pneumotoxin, plus the combined toxic leucomains of tissue waste, etc. The measure of these, especially of the first class, will depend on the virulency and special characteristics of the infecting germ, and the intangible and immeasurable general and special resistance offered by the patient. This will necessarily vary infinitely in different persons and in the same person at different times, and this brings to the fore those large questions of inherent and acquired relative immunity and susceptibility which can only be mentioned at this time. Neither can any attempt be made to analyze the influence of the immediate and more or less remote effects of pneumococcal activity, namely, extent of the hepatization, pleurisy, pericarditis, cardiac thrombosis, meningitis, etc., and of such accidental complications as nephritis, cardiac valvular disease, arterial degenerations, anemias, diabetes, obesity, etc., direct and marked as they must be.

Time will not permit a consideration of the bearing exercised on the prevalence and mortality of pneumonia by the changing environments of the population as a whole or in its parts—the varying age relations, the prevalence of drunkenness, the therapeutic modifications which have ensued, as well as other important factors, although there can be no question as to their weight as modifying influences. I will, therefore, content myself by reiterating the following conclusions:

1. Pneumonia is a very prevalent disease, and its prevalence is increasing.

2. This increasing prevalence is probably due to the wider diffusion of the more vigorous strains of the pneumococcus, made possible by the increasing commingling of people.

3. The pneumococcus is to be found in the upper respiratory passages of a very large proportion of healthy persons, and it is the migration of these ever-present germs into the pulmonary alveoli which causes pneumonia.



4. Pneumonia is a very fatal disease, and its mortality is increasing.

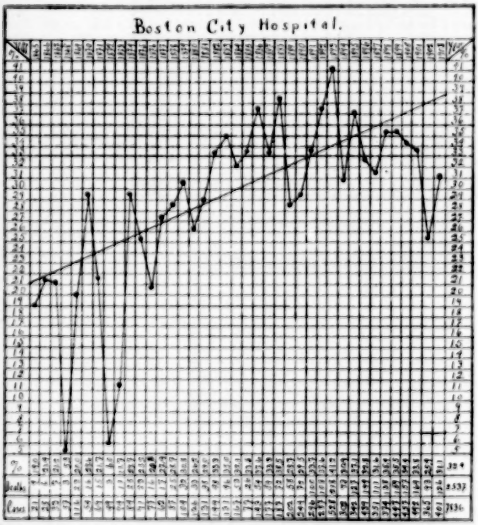
5. The increasing mortality is probably due to the greater average virulency of the pneumococcus.

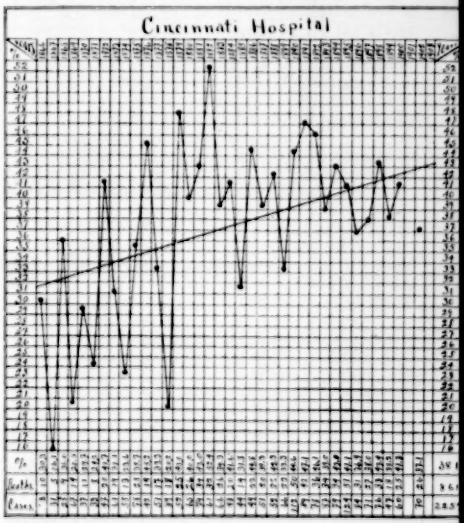
What can we do to prevent and cure pneumonia? In my opinion, we now have the foundation laid, as outlined above, for a reasonable and practicable prophylaxis. We are prepared to formulate broad rules, with insistence on some of the details, but the latter will require careful and prolonged study before they can be reduced to that clearness and simplicity which will appeal to every mind and compel acquiescence and compliance. I believe, however, that the time is now ripe for a great forward movement along these lines. I have certainly

failed to feel aright the professional and public pulse if we have not at our hand a populace ready and willing to be instructed in this matter, and to heartily co-operate with us in every reasonable prophylactic measure which we may recommend. This is indeed fortunate, for without such assistance all our efforts will go for naught.

The following prophylactic measures, the reasons for each of which are obvious, are offered for consideration:

1. Pneumonic sputum should be destroyed before it has become dry. The sputum which clings to the teeth and lips, and that which may adhere to the fingers and bedding, should be wiped up with moistened cotton, gauze or other cloth and these burned. All sputum, although not pneumonic, might well be destroyed. In coughing, in the case of the healthy as well as the pneumonic, a cloth, preferably moist, should be held before the mouth in such manner as to prevent the projection into the surrounding air of the fine, insensible, but probably pneumococci-bearing spray which follows ordinary coughing. The same applies to sneezing and blowing the nose.





2. The nostrils, mouth and throat should be kept as clean as possible. Cleansing sprays and washes for the nostrils; washes for the mouth and brushing the teeth; gargles and drinks for the throat. Permanent occlusions of the nostrils should be removed, while transient ones may well be cared for by the more or less frequent use of a spray of adrenalin solution. Honeycombed tonsils and adenoid growths should be removed. Taking a drink of water after eating is a habit which should be formed and cultivated. Every means should be taken to prevent sleeping with the mouth open.

3. The room occupied by a pneumonic patient should be afterward disinfected, as is done after diphtheria and some other infectious diseases. Remaining long or unnecessarily in a room occupied by a pneumonic patient should be avoided.

4. Respiratory catarrhs, from whatever infection, should be avoided, and if contracted should be relieved as quickly as possible.

5. Physical and mental exhaustion; privation; undue exposure to cold and inclement weather, all should be avoided as far as practicable.

In the treatment of pneumonia we are, as yet, lacking in a direct antipneumonic remedy—a specific—yet in the management of the pneumonic attack, which must be conservative and symptomatic, certain definite objects should be kept in view.

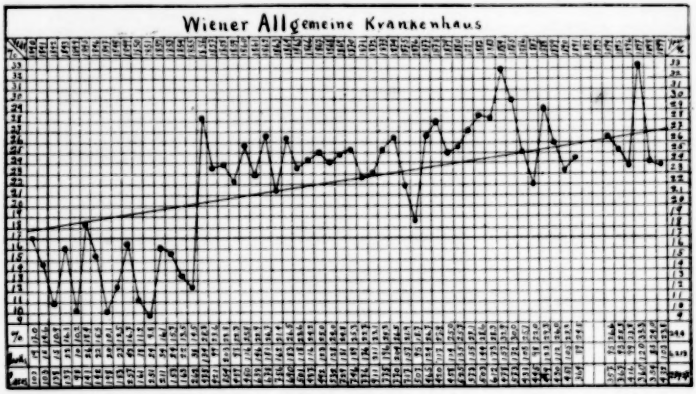
Preliminarily, it may be mentioned that the patient's environment should be the best which is available. The nursing should be assiduous and of the highest grade. The medical attention should be intelligent, careful, observant and unremitting.

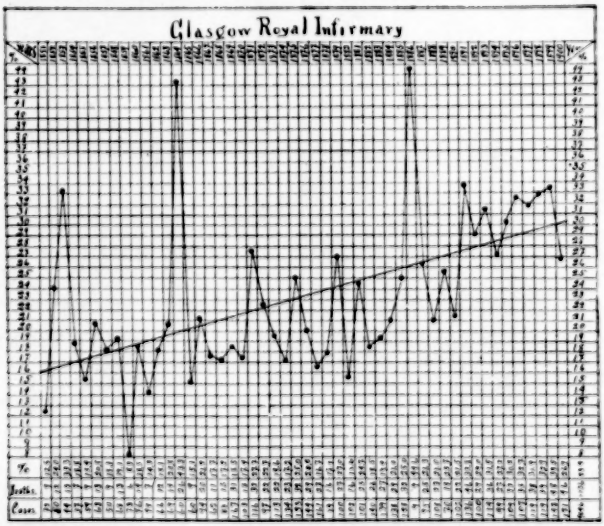
At the very beginning of the pneumonic attack the patient should be placed in bed, surrounded by bottles of hot water and given a hypodermic injection of a single small dose of morphia, e. g., 1/16 to 1/8 grain. He should be allowed to lie quietly until the subsidence of the chill, when the bottles of hot water should be removed. If perspiration should be profuse the surface of the body should be dried. The bowels should now be opened by an enema of 2 oz. Epsom salts, 2 oz. glycerin and 12 oz. water. Later an efficient cathartic should be given.

Moot questions arise with surprising promptness. The first of these will be that of the management of the reduced arterial tension, which is one of the earliest and most persistent of the symptoms of pneumonia. This is probably an efficient provision of nature for setting free and mobilizing an army of defending leucocytes, and protecting the tissues of the body from the irritating and paralyzing effects of the pneumococcal toxins. Nevertheless, certain other and most undesirable effects follow, as, e. g., the arterial system is underfilled, while the venous system is overfilled with blood; osmosis through the capillary walls is largely suspended, the tissues are not nourished and waste material is not removed; the heart, contracting against a greatly reduced resistance, becomes tired or exhausted. What shall we do under

these circumstances? Shall we, following the lead of Nature, attempt to still further reduce the arterial tension by the administration of such agents as nitroglycerin, iodid of potassium, etc.? Shall we assume that Nature is making a mistake and promptly give digitalis, adrenalin chlorid, etc.? Or shall we acknowledge that we do not know what is best to be done and forbear interference? Personally, I am inclined, in the ordinary case, to supplement the evident efforts of Nature by giving, during the first few hours only, 3 to 5 drops of tincture of veratrum viride every 2 or 3 hours until nausea has been produced, or the initiatory surprise of the attack has passed. Later I give digitalis in moderate or, more frequently, large doses, e. g., 10 to 20 drops of an active tincture every 3 to 6 hours.

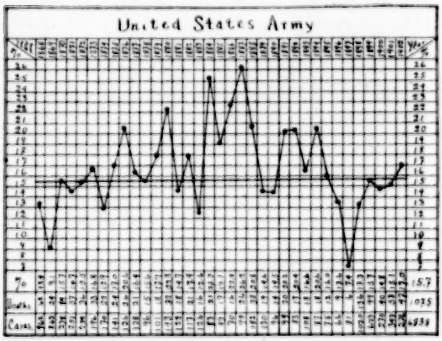
Another problem which is likely to arise is that of pyrexia. Shall we attempt to reduce high temperatures, and, if so, by what means shall it be accomplished? A temperature which is under the circumstances high, whether it is 103 or 105, should be reduced. The means which I prefer to use in bringing about this result are the ice cap and the external application of 15 to 25 drops of guaiacol.





Yet another problem is that of ridding the system of toxins. Is this accomplished by the leucocytes, and, if so, can we innocently augment the leucocytosis which is normally present, and by what means? This may be done by the use of nucleinic acid, salicylate of soda, etc. I find myself, however, having recourse to these agents only when the ordinary leucocytosis fails to ap-

pear, or, having appeared, subsequently declines. The one agent, however, to which we can appeal with a certainty that the heavy burden of profound toxemia will be lightened, is venesection. If, under these circumstances, from 8 to 24 ounces of blood is withdrawn, the amount of pneumotoxin in the blood vessels is, initially, reduced from 1/30 to 1/10. If at the same time there is introduced into the system, rapidly, a quantity of water equivalent to the amount of blood withdrawn, the remaining toxins are very appreciably diluted. This may be done by the employment of large enemas or by hypodermoclysis of normal salt solution. Profound toxemia often manifests itself by high temperature; gradually increasing frequency of the pulse, with lowering tension; restlessness and delirium, or a peculiar clearness of intellect; sallowness or duskiness of the surface, etc., and in these cases I can strongly recommend the free abstraction of blood, with normal salt solution hypodermoclysis. Do not, however, await the fullest development of such symptoms, but institute these measures on the very first indications of their appearance. In this connection I wish to call particular attention to the advisability of giving fluids very freely throughout the pneumonic attack, for the purpose of



continuously washing the blood and thereby ridding the system of as much toxin as possible.

The rôle of the chlorids in pneumonia is not well understood. However, one of the most remarkable of the pneumonic phenomena is the great diminution or disappearance of the chlorids from the urine in some cases. This occurs less frequently and less profoundly than is popularly supposed, yet it is a condition to be considered. It is reasonable to infer that the chlorids are required in the blood, in the extra-vascular fluids of the body and in the alveolar exudate for purposes of defense against the pneumococcus or its toxins. This is a sufficient reason, in my own opinion and in my practice, for the systematic use of sodium chlorid as a therapeutic agent, and I direct that all foods be well salted, and that saline enemata be given as freely and as frequently as they can be retained.

The antipneumococcic sera thus far placed on the market have failed to meet that favor at the hands of clinicians which is quickly and enthusiastically awarded every therapeutic novelty of real value. Personally, I have witnessed phenomena following the hypodermic injection of such sera which leads me to believe that they may be made agents of real and beneficent power. Analogy leads us to believe that a useful antipneumococcic serum may be produced, and I am hopeful that this will be early accomplished.

Fermentative and putrefactive changes in the intestines are not rare and should be accorded special consideration. This will usually be prevented by the early catharsis which was recommended; however, throughout the entire attack the functional activity of the gastro-intestinal tract should be often and carefully investigated. An excess of sulphates or of indican in the urine; the presence of a paretic state of the intestines, with tympanitic distension and an inability to pass flatus; the sudden onset of fetid diarrhea, all should be recognized at once and proper relieving measures applied, as, for example, regulation of the diet, the judicious use of cathartics, the employment of stimulating enemata and the administration of some efficient intestinal antiseptic.

Pulmonary edema is an occasional event which, despite its serious nature, may occur early enough to permit of relief. Energetic stimulation of the nervous system by strychnia, of the capillaries by adrenalin, and of the heart by a small dose of morphia, are the proper remedies. The appearance of profuse, possibly cool, perspiration is an ominous, but not hopeless, symptom. Here a prompt appeal to rational therapeutics may be of incalculable value to the patient. The condition is probably akin to that of pulmonary edema and requires similar management.

Oxygen inhalations meet my approval. I begin their use comparatively early and employ them somewhat more freely than is usual. Oxygen, used in this manner, I believe to be useful and not at all harmful.

It is not my intention to consider the numerous minor, although often eminently useful, measures which are required to meet the various indications for treatment which may arise during the pneumonic attack. These defy enumeration and must be applied to meet special case requirements.

Whether impending death, in pneumonia, can ever be averted is an interesting and important question. That conditions of great peril may be relieved in some cases I am firmly convinced. Among these may be mentioned profound toxemia, circulatory failure, pulmonary edema, intestinal paresis, failure of the nervous reflexes, etc. When, however, death has actually begun (the earliest indication of which is an increasing dyspnea, with a rising and falling of the trachea and an unobtrusive clicking noise with each respiration, which persists after coughing), my experience gives no instance of recovery.

Finally, the remarkable suddenness with which the changes occur in pneumonia is one of the features which is peculiarly characteristic. The patient is stricken suddenly; he improves suddenly; he gets worse suddenly. For this reason pneumonic patients should be given the most careful, observant, intelligent and unremitting attention. Not only should the physician's visits be frequent, but in not a few cases he should be in constant attendance. It is certain that the presence of the physician, ready to act at the moment when unfavorable and portentious conditions arise, increases the patient's chances of recovery, and I am convinced that, in many cases, if such medical attention is not supplied, he is being deprived of some of the resources of our art, and that his chances of recovery are thereby directly lessened. I am quite sure that in few positions of peril can the resources of medicine be more humanely employed than in a well-generaled combat with pneumonia.

4744 Woodlawn Avenue.

PNEUMONIA.

THE STUDY OF A SERIES OF CASES WITH SPECIAL REFERENCE TO DIAGNOSIS AND COMPLICATIONS.*

JOSEPH SAILER, M.D.
PHILADELPHIA.

The following is a summary of the result obtained from a study of 65 cases of croupous pneumonia and allied conditions observed in the wards of the Philadelphia Hospital during the past winter. The service at this hospital is peculiar. Many cases of pneumonia are transferred from the out-ward, which, as the Philadelphia Poorhouse, contains a large proportion of seniles. A considerable proportion is also transferred to the medical from the alcoholic wards, cases developing in patients brought in for treatment for delirium tremens. The remaining cases are nearly all obtained from the most indigent classes of Philadelphia. As a result, we find that pneumonia runs a comparatively severe course and complications of a grave form are exceedingly common. The statistical information ordinarily obtained from the cases in the present instance is, therefore, of little importance and may be dismissed briefly. The ages of the patients were as follows:

From 0 to 10 years	1 case.
From 10 to 20 years	4 cases.
From 20 to 30 years	10 cases.
From 30 to 40 years	10 cases.
From 40 to 50 years	8 cases.
From 50 to 60 years	9 cases.
From 60 to 70 years	13 cases.
From 70 to 80 years	4 cases.

Nearly 40 per cent. of the cases, therefore, were over 60 years of age. The mortality is correspondingly high, 35 cases dying and 30 surviving. It is of interest in this connection to state that, from statistics collected by Dr. Landis, the mortality at Blockley in cases of pneumonia for the past years has been slightly over 50 per cent. The distribution, as determined by physical signs and confirmed wherever possible by autopsy, is as follows:

Left lower lobe alone	16
Left upper lobe alone	2
Right lower lobe	12
Right upper lobe	13

In addition, there were 5 cases in which a diagnosis was made of involvement of the right upper and middle lobes. It is probable that these two sets of statistics should be grouped together. The entire left lung was involved in 4 cases, and the entire right lung in 3 cases. In 1 case the entire left lung and the upper and lower lobes of the right lung were completely consolidated, the only pulmonary tissues containing air being the middle lobe on the left side. This patient had, before death, a respiratory rate averaging over 80. Both lower lobes were involved in one case, and the left lower and right middle lobes were involved in another. This also was confirmed by autopsy.

Aside from the case of extreme involvement, the only interesting effect is the unusually large proportion of cases in which the upper lobe was involved. There were certain points to which particular attention was paid in the course of the winter in order to determine some questions at present under discussion. It has been generally asserted that leucocytosis renders the prognosis more favorable. In the cases that recovered there were less than 10,000 leucocytes in 3 cases, between 10,000 and 20,000 in 10 cases, between 20,000 and 30,000 in 5 cases, between 30,000 and 40,000 in 5 cases, between 40,000 and 50,000 in 1 case, and between 50,000 and 60,000 in 2 cases. The classification is always made from the maximum count. Of the cases that died the leucocytes were: Between 10,000 and 20,000 in 11 cases, between 20,000 and 30,000 in 4 cases, between 30,000 and 40,000 in 1 case, and between 40,000 and 50,000 in 1 case. Therefore, although the advantage is slightly in favor of the cases that recovered, it does not appear that any definite conclusions can be drawn from the leucocytic count, and it seems also improbable that any method of treatment which is based merely on the increase in the leucocytes is likely to be of any advantage.

In the majority of the cases the urine was examined quantitatively for the chlorids. They were entirely absent on one or more occasions during the height of the disease in 29 cases. In 23 additional cases they were present in quantities of less than 3 per cent., and in all the remaining cases in which we were certain of the diagnosis of croupous pneumonia they were greatly reduced. This subject is one concerning which there is at present a good deal of dispute. Aufrecht, in Nothnagel's Practice, states that the chlorids are of no prognostic and very little diagnostic value. Musser, in commenting on this, quotes Hutchinson to the effect that the diminution is more constant in pneumonia than in other diseases, and therefore is of some diagnostic value. From a study of our cases we reached the conclusion that the quantity of chlorids in the urine is not an indication of the subsequent course of the disease, as great a proportion of deaths occurring in those cases in which the chlorids were entirely absent as in those in which they were more or less moderately reduced. On the other hand, comparisons of the excretion of the chlorids in pneumonia and their excretion in other febrile conditions, particularly typhoid fever and pulmonary tuberculosis, having shown so constantly that in the latter states the reduction is comparatively insignificant, and in pneumonia always considerable, we have come to place the highest value on it in the diagnosis of pneumonia. In one case the absence of chlorids led to a successful diagnosis in pneumonia in which throughout the entire course of the disease there had been none of the physical signs of pneumonia. The diagnosis was only confirmed at autopsy, and in several of the cases we report the diagnosis was suspected from the urinary examination before the physical signs were sufficiently pronounced to have made it possible to diagnose pneumonia by them alone.

The examination of the sputum for the presence of pneumococci could not, unfortunately, be made in all cases. In 16 cases in which it was made they were positive 14 times. In one the signs were somewhat atypical. Tubercle bacilli were found, and the autopsy revealed a tubercular cavity surrounded by pneumonic areas, which the pathologist regarded as croupous pneumonia. The diagnosis in this case before death was pneumonia complicated by tuberculosis. The leucocytes were 15,600, and the chlorids ranged from 0 to 7 per cent. The other case was not really one of pneumonia. The patient had had pneumonia three months previously, and the physical signs and the odor of the breath pointed to gangrene of the lung, which was confirmed at autopsy. Blood cultures were only attempted in one case, and in that one no satisfactory results were obtained. The clinical and physical signs were, in general, characteristic. A history of chill was obtained in 32 cases. In 19 no history could be obtained, and in 9 cases, usually because the patients when admitted were suffering from alcoholism, no definite history could be ascertained.

*Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. J. M. Anders, Frank Jones and W. S. Thayer.

Of the physical signs, we were chiefly interested in the bronchial breathing. The earlier writers on physical signs in the lungs, followed Skoda in regarding the indeterminate or indefinite respiratory murmur as characteristic of consolidation of the lung. Of late years, however, this appears to have been partially forgotten, and there is even some question as to whether, when consolidation is complete, bronchial breathing is ever absent, although it is admitted by some clinicians that in the very early stages of the disease the respiratory murmur may be feeble or oppressed. We were able to discriminate between two forms of bronchial breathing, to which we gave the name of loud and faint. In both forms the respiratory murmur has the hollow sound and both inspiration and expiration are equally long and loud. The difference, therefore, is one of degree; but the faint bronchial breathing is often barely audible on the most careful and attentive auscultation, and it is very much fainter than the normal breath sounds. This faint bronchial breathing, although occurring more commonly in the early stage of pneumonia, is not by any means limited to the period of congestion. It was frequently observed far into the course of the disease, when the note over the affected lung was absolutely flat, and when both bronchophony and pectoriloquy were distinct. It was noted in 21 of our cases, usually replaced toward the end by loud bronchial breathing, but occasionally persistent. The following case was particularly interesting:

P. R., an Italian laborer, was admitted complaining of malaise, chills, and diarrhea which had lasted for 13 days. The entire right lung was flat from the apex to the base, the bronchial sounds were almost unaudible, but of a distinct bronchial character. Vocal resonance and tactile fremitus were diminished; the heart and liver were not displaced; the lungs expanded equally; exploratory puncture made on several occasions failed to show the existence of any fluid. After the patient had been in the hospital five days whispered pectoriloquy appeared, of a most intense character; bronchophony was also present, and in the course of a few days the bronchial breathing became very pronounced. Lysis commenced on the sixth day of the patient's stay in the hospital, and was complete six days later. During lysis numerous moist râles were heard in the lung. In this case the chlorids were 11 per cent., the leucocytes were 7,280; the Widal reaction was repeatedly negative; tubercle bacilli were not found, but the sputum contained great numbers of the pneumococcus.

Of the other physical signs we shall only mention that wooden tympany was only observed in 2 cases, although Aufrecht regards it as fairly frequent. Herpes was observed 4 times, icterus 3 times. Feeble heart action and albuminuria were comparatively common. Profound cyanosis was present in 2 cases; in 1 it was temporarily relieved by venesection, but the patient subsequently died. The other patient was treated with antipneumococcic serum and recovered. Of the symptoms, very severe abdominal pain was present 4 times; it was associated with tenderness in the hypochondrium on the same side as the pneumonia. Two of these cases recovered. On one of the others no autopsy was obtained; the other showed chronic obliterative pleurisy and hydropericardium, so that the symptoms could not be ascribed to diaphragmatic involvement.

The complications were numerous. Chronic nephritis, usually of advanced type, was found in 17 of 25 autopsies. Pleurisy, either chronic or acute, was present in every case. In 2 there was empyema, in 1 gangrene of the lung, in 2 acute fibrinous pericarditis, in 1 chronic obliterative pericarditis, in 1 acute ulcerative endocarditis, and in 1 acute pneumococcic meningitis. In this case paralysis of the branches of the third nerve and the presence of Kernig's sign had been demonstrated before death. One patient, on whom an autopsy was not obtained, developed a flaccid right hemiplegia, with absent reflexes and a positive Babinski, three hours before he died. In 4 cases tubercular lesions were present, twice in the form of acute cavity, once as a healed cavity, and once as general diffuse tuberculosis involving the adrenals and the peritoneum. The remaining cases were treated with another variety of serum.

CASE 1.—J. D., white, aged 47; left upper lobe; six injections were given, each followed by a fall of one or two degrees at intervals of about twelve hours. Crisis occurred on the ninth day.

CASE 2.—A. J., colored, aged 18, left upper lobe and later entire lung and part of right lung; three injections were given on the ninth day, and the temperature fell about one degree. Death occurred on the tenth day. Only the middle lobe was not consolidated.

CASE 3.—S. N., white, aged 45; left upper lobe, deeply cyanosed. Two injections of serum were followed by fall of temperature of 3 and 4 degrees. Crisis occurred on the seventh day.

CASE 4.—C. T., white, aged 60; right upper lobe; 5 injections of serum were given, commencing on the fifth day. The fall of temperature varied from 1 to 2½ degrees. Crisis commenced on the eighth day.

CASE 5.—H. V., white, aged 33; right upper lobe; icterus. two injections were given, the first followed by a fall of 2½ degrees, the second by a fall of 1 degree. Crisis occurred on the seventh day. Three days later the temperature again rose, became hectic; tubercle bacilli were found, and the patient subsequently died.

CASE 6.—J. M., white, aged 52; right upper lobe. There was a drop of the temperature to normal on the third day for a few hours. On the fourth day the serum injections were commenced and seven were given, the antipyretic effect being observed only on the last two days. Crisis occurred on the ninth day.

Altogether, there were three deaths and seven recoveries. Of the fatal cases, one was distinctly unfavorable, another practically moribund when the serum was employed, and the third died of tubercular infection after apparent recovery from the pneumonia. Of the cases that recovered, 3 may be regarded as severe—one with hyperpyrexia, one with cyanosis, and one with jaundice. Both varieties of serum showed in certain cases a distinct antipyretic action, but in other cases this was not observed. Nevertheless, the general results may be regarded as distinctly encouraging.

Pseudo-crisis occurred in 2 cases; in one of these the temperature fell twice, with marked improvement not only of the symptoms, but also of the physical signs. One case died suddenly of acute pulmonary edema seven days after the crisis.

The treatment consisted of expectant stimulation, with occasional resort to hypodermoclysis. Ten cases were treated with antipneumococcic serum provided by two firms; these cases were in part selected; two were distinctly unfavorable cases, and the others favorable subjects with not more than ordinarily severe infection.

The first case, a boy, was admitted the third day of the disease. In spite of repeated sponging, the temperature rose to 106. On the fourth day serum was injected, and repeated five times on the fifth day and once on the sixth. There was no perceptible effect on the temperature, which remained about 104 to 105. The respirations ranged between 40 and 55. Crisis occurred on the sixth day, and the recovery was uneventful.

The second, a negress of 58, with arteriosclerosis. There was consolidation of the left lower lobe. The

chlorids were absent, the leucocytes 32,800; 20 c.c. of serum were injected every six hours without any perceptible result, and the patient died.

The third, a man of 40, had a mild attack; the serum produced no perceptible effect, and he made an uneventful recovery.

The fourth, a man of 37, was admitted with signs of consolidation at the right base. On the fourth day 100 c.c. of serum were injected in the course of sixteen hours. The temperature, which had ranged between 103 and 104, steadily fell to 100. The supply of serum was exhausted, and eight hours later the temperature rose again to 103, where it remained for twenty-four hours. A new supply was then obtained and 120 c.c. injected in twelve hours. The temperature promptly fell to 99 and remained between 99 and 100 for three days, during which time 300 c.c. of serum were injected. The pulse and respirations also improved. Six days later there was a profuse urticarial eruption, with fever and pain in the joints, the attack lasting eight days.

DISCUSSION

ON PAPERS BY DRS. WELLS AND SAILER.

DR. R. C. CABOT, Boston—Dr. Wells' tables of the cases of pneumonia at the Massachusetts General and Boston City hospitals do not, in my opinion, show any increase in the mortality from this disease during the past twenty years. Before that the cases are too few to warrant any conclusions whatever.

DR. G. F. JENKINS, Keokuk, Iowa—There are one or two etiologic factors regarding which some information might be given. Since 1890 we have had an epidemic of influenza which of itself has not been particularly serious, but as an etiologic factor in croupus pneumonia it is of great importance. Influenza affects the mucous membrane, making it susceptible to secondary infection by the pneumococcus, and that is why it is more prevalent now than it was fifteen or more years ago. Another etiologic factor is the crowding together of people in great cities. This crowding lessens the resisting power and at the same time multiplies greatly the centers of pneumococcus infection. I think these two factors will explain to some extent the great increase in croupous pneumonia. With regard to venesection, I think we should go back and study the question a little bit. I think the proper use of cold water, the proper hygienic surroundings, fresh air, diet and venesection when indicated, is very important.

DR. DELANCEY ROCHESTER, Buffalo—There are one or two points in which I take issue, particularly the treatment of symptoms as symptoms when the possible treatment of the disease as a whole would overcome the symptoms. It would be best to recognize the causes producing the symptoms, and treat them. In cases of toxemia, if you get rid of it you will certainly get rid of the symptoms. I think it is a great mistake to add, in these cases, other poisons in the way of drugs when the patients are already poisoned by the toxins of the disease. I approve of bleeding early in sthenic cases, but I disapprove of the administration of opium in the beginning. I believe in getting rid of the poisons by the proper use of laxatives, particularly calomel and salts, and by one agent which acts on the skin to produce sweating, namely, hot air by means of a scientifically administered hot mustard foot bath; by sweating we can get rid of the poison of pneumonia a great deal better than by the administration of diaphoretic medicines. Last year at the New York State Medical Association I reported 210 cases of pneumonia, with 23 deaths; this included all sorts of cases and gave about 11 per cent. mortality. This is comparatively a very low death rate. To relieve the pulmonary edema occurring late in the disease, as a result of failure of the right heart, I believe that bleeding is of the utmost value; when in pneumonia the right heart becomes greatly dilated, as in the case of a boy of 16 years, whose heart apex was in the axillary line, with consolidation of the right lung, with a liver extending one inch below the border of the ribs, and with pulsation in the veins of the neck, by withdrawing about 800 c.c. of blood the pulse can be made to fall from 140 to 120, and the temperature several degrees, and the respirations from 56 to 36, and impending death be thus averted, it is a procedure not to be neglected. I think it is a mistake to treat the temperature. If you treat the conditions present, the toxemia and then the special conditions as they arise, you can get good results. The boy referred to recovered after nineteen days' sickness.

DR. ROBERT H. BABCOCK, Chicago—I have been particularly struck by a statement made in the second paper that a patient died from pulmonary edema seven days after the crisis. Pulmonary edema is usually supposed to be due to right heart failure, and the occurrence of the edema seven days after the crisis suggests the possibility of the explanation offered by an Italian experimenter that pulmonary edema is due, not to heart failure, but is a manifestation of pneumococcus infection acting on the pulmonary alveoli. He found in cases examined after death evidences of this, since the pneumococci were demonstrable in the alveolar walls. It certainly seems in this case that the late pulmonary edema might have been a manifestation of a fresh infection by the pneumococcus. If I understood what Dr. Wells stated concerning blood pressure, he insisted that it is low from the start. I believe that if blood pressure is low at the start it is a contraindication to the administration of veratrum viride; in fact, I protest against the use of cardiac depressants when the blood pressure is already low. He stated that the low blood pressure might be an effort on the part of nature to resist infection by setting free leucocytes; that is purely theoretical; but granting the assumption correct, I believe the harm likely to be done by veratrum offsets any benefit due to increased leucocytosis. If the blood pressure is low, and grows lower and lower, then as the danger progresses digitalis is the agent par excellence. We are all influenced by personal experience, but I think it well to cite what Fraenkel from his great experience finds useful. He asserts that the tendency to low blood pressure must be combated, and is offset by the early use of digitalis. The form he employs is a fresh infusion injected hypodermatically. It is his rule to give four grams of the leaves in 100 c.c. of water, and this amount is injected during every twenty-four hours for three days, until twelve grams of the leaves have been injected. He begins the treatment in all cases seen before the third day, excepting those in which there is so much arteriosclerosis as to contraindicate the use of a drug. Fraenkel believes death is the result of toxemia acting on the myocardium, and that, as this danger is enhanced by the low arterial tension, it is absolutely necessary to counteract the tendency to increasing lowness of blood pressure, and personally I believe this is sound reason.

DR. S. SOLIS COHEN, Philadelphia—There are two periods in the clinical history of pneumonia, in one or both of which venesection may, in many cases, be usually employed. First, in the beginning of the attack, to reduce the toxemia. Secondly, toward the end of the attack, to reduce the overload on the right heart. The results obtained in any particular case by venesection, or, indeed, by any other measure, can not, however, be applied to all cases without qualification; the keynote in the treatment of pneumonia, as much as in any disease, is individualization. There are so many factors to be considered—the constitution and habits of the patient, the environment, the preceding or concomitant complications, etc.—that it sometimes becomes a delicate problem to decide what to do in any special case. Whenever the indication for interference is not clear, there should be no interference. However, we may justly draw conclusions from similar features and relations, pathologic and therapeutic, repeated in a great number of cases. I am satisfied that a goodly quantity of blood may be removed from a patient otherwise in good condition (that is to say, not senile nor terminal infection cases, etc., but cases of frank pneumococcus infection) at the inception of the attack, diminishing the amount of toxemia and stimulating the reproduction of healthy blood cells. This is of benefit independently of the mechanical relief to the obstruction of the circulation in the lung. Late in the disease the indication is purely mechanical. When blood is removed under the first

condition it is well to follow with saline infusion into the vein or under the skin—not too much, not too fast; but in the second condition saline infusion is not well given, because it does not seem reasonable to take blood to relieve the heart and then to add the same quantity of another fluid to embarrass the heart as much as before. There is a qualification to this, however, and that is in cases in which the blood is very thick and runs sluggishly from the open vein. Saline infusion will dilute it, and the respective quantities may be adjusted with skill. Temperature in itself, unless excessive or very low, offers no indication for treatment. I have learned to look on cases having temperatures of 103, 104 or even 105 degrees F. as being—other things equal—more favorable than those cases having a temperature of 100 to 101 degrees. The vital reaction is better and the temperature seems to be an indication of this vital reaction. Fenwick's statistics point in this direction, too, and I was recently reminded on looking over my student notes of DaCosta's lectures that he had taught the same thing. The matter is important, because many patients are killed by the by-effects of antipyretic drugs, needless under any circumstances. As to veratrum viride, it should be remembered that many drugs are used, concerning which it may be said that their physiologic action as laid down in the textbooks seems to have little bearing on their effect as observed at the bedside. I have seen some cases benefited by veratrum viride, given early and stopped soon, and I know not why. Certainly the benefit has not been due to depression of the heart. Dr. Babcock has well said that this would be a counter-indication. Perhaps there may be something in the complex chemistry of infections and drugs and body cells and fluids, of toxins and antitoxins, amboceptors and complements, which may hereafter explain its action. For the present it has distinct empirical value used judiciously—that is, before consolidation and for prompt effect; using the pulse as an index, diminishing the dose as the pulse falls, and withdrawing the drug as soon as the pulse reaches 60 or 70 beats in the minute, or otherwise shows that the physiologic effect of veratrum has been attained. This, I repeat, is an index only.

DR. EDWARD F. WELLS—In a twenty minutes' paper on pneumonia one can barely indicate a few of the general principles and can not go into a discussion of any of these features systematically. In answer to Dr. Cabot, I stated explicitly that the very first effect of pneumonia on the system was a reduction of the arterial tension: there is no doubt about this. Within a few minutes of the onset of the pneumonic chill this reduction appears. If this is an effort of nature to protect the system from the initial shock of a pneumococcus poison, the question arises whether we should or should not assist nature, and I believe that, early, we should do so. In view of this I have taught that veratrum viride, given early in these cases, seems to offer a further protection from the violence of the initial shock. Empirically we know that veratrum viride will reduce the frequency of the pulse and this without raising the arterial tension. On the contrary, the capillaries are still further dilated. I most emphatically disagree with Dr. Cohen as to the advantage of high temperature in this disease. One hundred and sixty years ago it was stated by Cleghorn, who practiced scientific medicine in the island of Minorica, that in pneumonia, in ordinary cases, the temperature in the afternoon reached 102 degrees F. with a favorable prognosis, but in severe cases and with a bad prognosis it reached 104 degrees. This statement applies to pneumonia to-day as it did in the days of this great clinician. I wish to set myself right regarding the use of opium. I do not think any one appreciates more than I the disadvantages and dangers of the improper use of opium in pneumonia; but because it may be improperly used is no reason why it should not be used intelligently, properly and beneficently. I stated that in the beginning of the attack, during the course of the chill, that 1/16 or ¼ of a grain of morphin, given hyperdermatically, will quiet and soothe the patient and be very beneficial. Also late in the disease, similar small doses of morphin, especially in those dangerous conditions accompanied by profuse perspiration and pulmonary edema, small doses of morphin will stimulate the heart as nothing else can, and sometimes snatch victory from apparently certain disaster. With regard to blood-letting, from first to last, my only reason is to remove more or less of the toxins and I am quite satisfied that this is the keynote to the situation. Occasionally one may bleed for the relief of an over-distended right heart, but I always desire to anticipate that event if by the exercise of foresight and discretion it is possible to do so.

DR. JOSEPH SAILER—In pneumonia I have invariably found the blood pressure to be low. If very low I regard the prognosis as unfavorable. In another series of cases I hope to employ the anti-pneumococcic serum intravenously, chiefly because certain other serums, particularly the anti-plague serum, seem to be more effective when introduced into the circulation than when introduced beneath the skin.

OLD UNREDUCED DISLOCATIONS.*

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The term, old unreduced dislocations, is here used to cover cases where the joint surfaces remain luxated for a month or more after the accident. The delay in effecting reduction may have been due either to non-recognition of the condition or to the failure of the original manipulative replacement efforts. The designation "irreducible" is a misnomer, since a joint incapable of reduction by one method may be reducible by another procedure.

DIAGNOSIS.

The chief element in the prevention of this condition lies in immediate diagnosis at a time when reduction is easy; old dislocations exist because of faulty diagnosis. With ordinary anatomic and surgical knowledge, with anesthesia and the Röntgen ray, primary diagnosis is usually a simple matter. Whenever uncertainty exists in regard to an injury near a joint, anesthesia should be the rule, since without its employment the pain and swelling often render accurate diagnosis impossible. Diagnosis once established, the treatment follows as a natural sequence. If manipulative efforts fail, operative measures should be at once instituted. The greatest difficulty will, of course, be encountered in dislocations associated with neighboring fractures, especially in the shoulder region, while the cases most likely to be overlooked are those complicated by severe injuries of other portions of the body.

In old dislocations of the shoulder, the body should be stripped to the waist and examined sitting and standing. In fracture of the head of the humerus, or of the neck of the scapula, or a separation of an epiphysis, the elbow can be brought easily to the side of the body, and mobility is the rule instead of fixation. In all old hip luxations the patient should be naked and examined in both the recumbent and standing posture. By this method many errors will be avoided. By comparison with its fellow, the loss of normal movements, difference in contour, altered relation of bones and restricted motion will be noted.

Pathologic dislocations from hip disease, congenital dislocations, coxa vara, and sliding up of the trochanter after fracture of the neck, should be carefully differentiated. Not infrequently I have been obliged in consultation to restrain attempts at reduction in cases both

* Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. DeForest Willard, Charles A. Powers and J. E. Moore.

of hip disease and of neck fracture, which had been incorrectly diagnosed as luxations.

COMPLICATIONS.

Complications and obstacles preventing reduction are: Inflammatory adhesions and deposits causing partial narrowing of the hole in the capsule; lacerations of muscles and tendons; filling up of the socket by torn muscle or fibrous deposit; fracture of the rim, with bony projections; fragments of fractured bone; a portion of capsule pushed back into the socket, and lastly, the anatomic and surgical ignorance of the surgeon. In dislocations of either shoulder or hip, fractures of the rim are not at all uncommon; the fragments may be found in the socket, or more frequently in the neighborhood, giving rise to osteophites, which interfere most seriously with reduction, even after open incision. Such an osteophite was the cause of a fatal result in the hands of Dr. Allis and myself, in which instance the external iliac vein was torn over a sharp cockspur bony point during manipulation of an old hip dislocation.

ACCIDENTS DURING MANIPULATIONS.

I shall never forget the suddenness with which a patient suddenly collapsed while I was assisting the late Professor Agnew, more than thirty years ago. In the midst of manipulations for reduction of a shoulder dislocation of six weeks' standing, a sudden ballooning of all the tissues about the axilla occurred, the patient became pulseless and apparently died; respiration ceased and the radial pulse disappeared. Instantaneous thumb pressure on the right subclavian artery arrested the current through an apparently ruptured axillary artery, and by the prompt application of restoratives the patient survived. The enormous hematoma that formed was afterward believed to have been produced by the tearing of the axillary vein. When the pulse returned at the wrist the tumor did not pulsate.

In Agnew's case only manipulations were employed, but in former days, when pulley traction was much more commonly used than at the present time, it was not remarkable that these accidents were common. Guérin tore off an entire arm. Bell tore the axillary structures to such an extent that immediate amputation was necessary. In other cases, gangrene has occurred, followed by either death or amputation. Gibson in 1823, in accordance with the practice of that day, after a week's depletion of blood letting, tartar emetic, etc., subjected the man to pulley extension and counter extension for half an hour, then manipulations were practiced for one and three-quarters of an hour more, one of the procedures being to hang the patient by the axilla over a door. As this was in preanesthetic days, and as the surgeon was obliged on the following morning to tie the subclavian for a pulsating tumor in the axilla, it is rather strange that the patient lived until the eighth day, with the arm in a state of incipient gangrene. The artery was found to have been firmly attached to the head of the bone and capsule.

Lister in 1873, in an old forward dislocation, ruptured the axillary artery with pulley traction by tearing a fibrous band attached to the coracoid and humerus. He tied the artery through an axillary incision and resected the head, but the patient died on the following day.

In twenty-four cases of injury to the axillary vessels during reduction manipulations collected by me,[1] fifteen terminated fatally; the result in two cases was uncertain; the axillary nerves were lacerated in one case; in another the brachial plexus was torn from the spinal column. Michans tore off both the median nerve and the brachial artery in reducing a luxation of the elbow, but saved the case by amputation. In the reduction of a posterior dislocation of the head of the femur, the sciatic nerve has been hooked up and carried forward in front of the neck of the femur, with great resultant tension and pain, flexion of the hip and disability.

OPERATIVE METHODS.

1. Manipulation and traction. 2. Continuous extension and counter-extension. 3. Arthrotomy, with section of all tissues interfering with reduction. 4. Resection, with replacement, when possible. 5. Subcutaneous incision of capsule or of surrounding tissues, a procedure usually uncertain and dangerous.

Manipulation and Traction.—In former times the resistance of the muscles was considered to be the chief element in the prevention of reduction, consequently extreme force by pulleys was employed, even to the tearing away of the limb. At the present time, recognizing that the muscles are only one of many obstacles involved, intelligent manipulation is considered of the first importance. An extreme degree of force should be avoided lest serious injury result. Full anesthesia should be secured and moderate manipulative and traction efforts instituted. These will vary with each joint involved, in accordance with the usual methods pursued in primary cases, being varied to suit the position of the bone, the present condition as shown by palpation, the skiagraph, etc. Hand movements are, as a rule, much safer than instrumental.

Shoulder.—The manipulative efforts at the shoulder for the reduction of an old dislocation will vary but little from the ordinary ones employed in recent reductions save that great caution must be observed in the preliminary breaking up of adhesions. Serious accidents, as already enumerated, or fractures may readily be produced by undue force. The indications are: to fix the scapula, apply traction, adduction, external rotation, pressure on head, adduction, flexion, internal rotation

The old method of upward traction was a most dangerous one, as it put great tension on the axillary tissues; outward traction is less risky, but should be employed with caution.

Reduction efforts rarely succeed four months after the luxation.

Hip.—An old hip-joint dislocation is a most formidable condition to encounter, and, next to the shoulder, this joint is the one most liable to be involved; it is also an injury most frequently undiagnosed, as the condition of fracture or of dislocation is often masked or overlooked when anesthesia has been carelessly omitted at the time of the original injury.

I recall a case that occurred twenty-five years ago, in which the man, three months after a heavy fall of earth compressing his body, was discovered to have a dorsal dislocation of the left hip. Under ether, I readily reduced this and placed it in the acetabulum with a distinct thud, and with the immediate resumption of the normal position of the leg. When comparison, however, was made with the right leg, it was discovered that the leg which had just been reduced was shorter than the one of the opposite side. This condition was very puzzling, until it was seen that the right leg was not only longer, but was also slightly everted, and that there was a fullness in the region of the thyroid foramen, thus showing that there had been a forward simultaneous dislocation of the opposite hip, both legs having evidently

1. Phil'a. Med. Times, Aug. 16, 1873.

been forced in the same direction. All efforts to reduce this failed, although, with the assistance of Dr. Allis, I applied all the then known methods of manipulation, leverage, traction, etc. The head could be carried to the position of dorsal dislocation, but could never be placed in the acetabulum. The fact that the left acetabulum had not been filled up through the three months, and that the rent in the capsule had not united, proved that other complications existed which prevented reduction of the right hip. What these complications were, of course, we could not determine, as at that time neither Allis nor myself was bold enough to cut down on the joint. Ten years later the man was doing hard laboring work.

Allis,[2] who has given most thorough experimental and practical work to hip dislocations, says that the greatest injury to the capsule is confined to the lower two-thirds, and that the upper thickened portion of the capsule, known as the Y ligament, is rarely lacerated, which accounts for its great service in restoration. The strong upper rim of the acetabulum, the surrounding muscles and the dense capsule, are all important elements in the prevention of a luxation.

A careful consideration, therefore, is necessary as to the probable character and direction of the force; whether a sudden blow or a slowly crushing power has been exerted. The *x*-ray is here most useful in determining the extent of the fractures and bony complications.

Allis' fundamental law is that a dislocated joint should be restored through steps in the reverse order of the displacement, consequently his manipulative reduction is based on the knowledge that the lower portion of the capsule is the one torn and that the head of the bone in dorsal dislocation, therefore, needs to be elevated into place. He first fastens the pelvis firmly to the floor by inserting into the wooden flooring three hooks—strong opened screw eyes—one near the perineum, and one on either side opposite the crest of the ilium. To these hooks the pelvis is firmly bandaged over towel pads. To avoid interference in the groins from the bandage, a flat metal cross, with its four ends curved on themselves sufficiently to hold the strips of the bandage, is placed above the pubis. To-and-fro turns of the bandage are then made from these hooks to the screw hooks in the floor. The femoral head is drawn downward by traction; then the flexed knee is lifted over the flexed arm of the surgeon until the head of the femur is brought opposite the acetabulum; if it catches on the rim, the surgeon steps across the opposite limb, carrying the knee with him into extreme adduction, while traction is still made toward the ceiling, and an assistant's hand is employed to lift the head into the socket. Reduction is usually accomplished with an audible snap. If it does not occur, the knee is then carried across the body to a state of abduction, while steady, simultaneous upward traction is employed. To increase the surgeon's tractile power, perforated iron bars are securely fixed with wet bandages to the sides of the lower half of the thigh. A rod connecting these bars makes an excellent handle for the surgeon in his traction and manipulation efforts. Fix pelvis, flex thigh, turn leg and heel out; lift, press on head, turn leg in, extend.

Second, or indirect method, employing the Y ligament of Bigelow as a fulcrum. When the head has been lifted as already described to a position just below the acetabulum, carry the knee with the leg flexed directly downward in extension; the Y ligament will thus be made tense and the head will be lifted into the socket. Bigelow's manipulations are flexion, abduction, eversion.

For a thyroid dislocation the reverse manipulations may be practiced, still following the law of reversed order, or the head may be thrown into the dorsal position and then reduced. In the forward dislocation first flex, abduct and make traction outward; then an assistant presses on the head during adduction and traction. Forward dislocation, second method, utilizing the Y ligament, flex, abduct, carrying the knee obliquely inward and downward; then rotate outward; not circumduction, lest the sciatic nerve be hooked up.

Bigelow's manipulations for thyroid dislocation are flexion, adduction, inversion, lifting, circumduction.

Continuous Extension and Counter-extension.—After failure of reduction by manipulation, a very useful adjuvant, especially for the lower extremities, is the application of continued weight and pulley extension in bed for a week or more, so as to relax and quiet muscular action. At the end of this time, under thorough relaxation by ether, manipulative efforts may be successful, although failure has occurred at the first attempt.

In the upper extremity it is much more difficult to apply continuous extension satisfactorily, even with air pads in the axilla and Stimson's couch with its perforation for the arm.

Arthrotomy and Excision.—When manipulations fail, the question of open operation becomes a serious matter, especially at the hips. The tissues surrounding the joint have not only been originally injured, but have also been subjected to repeated traumatisms during the several efforts at reduction. Their resistive power to infection has consequently been greatly lowered, and septic influences easily prevail, as is well instanced in the following case:

A man, 28 years of age, with an eight-month-old dorsal dislocation of the hip that had resisted eight attempts at reduction by as many different surgeons, applied to me for relief. The hip was immovable and useless. A carefully planned and systematic effort at reduction was made by myself, assisted by Dr. Allis, but without avail. At the earnest solicitation of the man I consented to operate. An incision was made over the trochanter, head and neck in the line of the gluteal muscles, separating the fibers; the tissues were cut away and the capsule opened, but the acetabulum could not be reached. An anterior incision was then made in the triangle formed by the tensor vaginæ femoris and the sartorius. The head of the sartorius and the long head of the rectus were cut away; the psoas was also cut from the lesser trochanter, the capsule opened, strong traction applied; the acetabulum was found filled to the level with fibrous tissue almost as tough as tendon. This was cut away with gouge and spud, and a large quantity of thickened tissue was cleaned from the head, which was even then reduced with great difficulty. The cushion in the acetabulum still prevented the head from sinking more than one-half into the cavity; the bone was, therefore, redislocated and the acetabulum absolutely cleared; at last the head remained easily in its socket; thorough drainage with rubber and gauze was introduced and the limb fixed with plaster of paris, slightly abducted and everted, and nearly in line with the body. The hemorrhage was considerable, but no ligatures were required after clamp hemostasis. The man vomited persistently from the time of operation, and died a week later from septic endocarditis. The operation was long and severe; the chances for infection were numerous.

Dr. Thomson fractured the femur in an attempt to reduce an old dislocation of the hip. He very wisely opened the joint, reduced the dislocation and the frac-

2. Dislocations of the Hip. Gross Prize Essay. Phil., 1896. Octavo, p. 167.

ture, and retained the latter in position with a silver nail, thereby securing a good result.

Shoulder: The necessity for operative relief will depend largely on the amount of disability and the extent of the pain, the latter being caused by pressure on the nerves and vessels.

In a two-month-old subcoracoid dislocation of the shoulder, after failure of manipulative methods, and finding the head thoroughly fixed, I made an incision in the pectorodeltoid groove and resected a portion of the capsule and of the spinati muscles. As the luxation still refused to yield a second incision was made about the middle of the deltoid, separating the fibers, and after thoroughly dividing the tissues the head was at last successfully placed in the glenoid cavity. The capsule was so greatly injured that its remnants were stitched with catgut to the acromion; the arm was fastened across the chest with a plaster-of-paris bandage, and, after two weeks, gentle passive movements were instituted, with good recovery of motion but with slight loss of abduction and elevation.

In a shoulder joint that was dislocated fifteen years previously through a football injury, and where the head of the bone slid back and forth on the anterior ledge of the glenoid, with some eighteen subsequent luxations inflammatory swellings and great disability, I made one incision in front of the deltoid and another through the center of the muscle, separating its fibers. The outer portion of the capsule had evidently been torn away at the time of the original injury, and the inner portion had been subsequently elongated and stretched. After replacing the bone the external portion of the capsule was stitched to the acromion and the anterior capsule folded and fastened with a chromicized catgut. The arm was held for several weeks in front of the thorax until good union had been secured, after which forward movements were especially encouraged, and a firm joint secured.[3]

The best access may be obtained to this region and the least injury done by cutting just posterior to the cephalic vein, in the groove between the deltoid and the pectoral; this gives excellent access to the head. The axillary incision, while more dangerous, is sometimes necessary when the adhesions between the head of the bone, arteries, veins and nerves are dense, and is also an excellent incision for resection, although through it the glenoid is less easily reached. If incision is made over the middle of the deltoid the fibers should be separated as much as possible, not divided, so as to avoid loss of abduction and elevation. The posterior incision, which starts beneath the acromion, is most liable to injure the circumflex nerve (which runs just below the acromial ridge), thus cutting off a large portion of the innervation of the deltoid. It affords easy access to the glenoid, but not to the head. Even with the anterior incision there will be some atrophy of the internal fibers of the deltoid, but this loss is partially compensated by the pectoral. The old operation of cutting off the attachment of the deltoid is a bad one. If the biceps tendon is torn or cut, it should be restitched. In excisions it is better to take away too much rather than too little. Hemorrhage is greatly lessened by closely hugging the bone with bone gouge or chisel. It is sometimes necessary to divide the tendons of the infraspinatus and supraspinatus, the long head of the biceps, subscapularis and teres minor. After freeing the tissues about the head and neck of femur or humerus, I have sometimes had the greatest difficulty in replacement and have been obliged to divide all the tissues most freely. In some cases traction on the head may be made through the incision by placing a curved bone elevator or strong wire about the head, by using a lever, or by drilling the bone and inserting strong steel hooks. When the glenoid cavity is filled with a tough cicatricial fibrous mass, the socket must be cleared with gouge and knife. In the young, great care should be taken not to injure the epiphysis, and resection should not be employed except under special circumstances. The natural accommodative mobility of the scapula must be taken into account, and the amount of adhesions. The subsequent fixation and pain depend largely on the original injury and the position of the head. In resections the keyhole saw or the heavy chain saw is advisable. Owing to the liability of breakage, I have had a chain saw made from an old écraseur. When old dislocation and fracture coexist, the question of manipulation or arthrotomy or excision is a serious one. The broken fragment may have united to the bone in bad position, or it may have become thoroughly adherent to surrounding tissues, or it may be entirely disconnected. Fragments may be nailed or wired in position. Resection of the head of humerus or femur, though often necessary in these cases, should not be undertaken as a positive rule, since a completely reduced upper joint fragment can sometimes be treated the same as an ordinary fracture and a fairly useful joint secured. In cases of doubt, an excision may be deferred in old persons until the amount of pain and disability is definitely ascertained, yet a resected shoulder joint, provided the muscles are not too seriously injured, often gives a more useful arm than the stiff ankylosed one so often secured by the forcible reduction of an old injury. Pressure of broken fragments on the axillary vessels and nerves usually gives great pain and demands resection. In one of my cases, however, where both dislocation and fracture existed, the aged man was so far advanced with locomotor ataxia that he was practically helpless, and lived several years without any serious inconvenience from the presence of the head in the axilla. In other cases, however, the pain is extreme; in others the inflammatory adhesions fasten the tissues in a mass which will not only resist attempts at manipulative reduction, but even persist in spite of open incision. Fractures of the shaft of the humerus and of the femur are not uncommon during efforts at reduction.

It is extremely important that every aseptic precaution be taken, as disturbance of tissues already below the normal resistive point is prone to give septic results. Drainage either by rubber tube or gauze is necessary on account of the severity and length of the operation.

Arthroplasty.—I have tried a number of methods to prevent the union of joint surfaces, but nature, while sometimes tolerating a foreign substance, usually rebels against its continued presence. Gold or silver foil is less irritating than rubber tissue. The best method is, when possible, to turn in a flap of fascia or connective tissue.

Results.—Souchon[4] gives, in his admirable compilation, the histories of 133 operative cases of old shoulder dislocation, with their results, accompanied by a complete bibliography. He gives the deaths immediately following the operation as 13 per cent., with an additional 10 per cent subsequently; the chief causes being gangrene, hemorrhage, sepsis and pneumonia. Of the

3. Burrell's operation for this condition of habitual dislocation is an excellent one. Trans. Amer. Surg. Asso., vol. xv, p. 293.

4. Operation of Irreducible Dislocation of the Shoulder Joint, Trans. Amer. Surg. Asso., 1897; octavo, p. 138.

collected cases about 27 per cent. suppurated. Naturally, sepsis was much more frequent previous to 1885. A good result, however, has, according to statistics, been secured in over 50 per cent. of cases.

Reerink gives the fatality of shoulder excision: in 47 operative cases, 14 became infected and 8 died of sepsis and other causes.

Elbow: A dislocation of the elbow sometimes remains undiagnosed and becomes fixed in its malposition. In a case of four months' standing (Fig. 1) after the first failure at reduction I applied extension for a week. The woman was pregnant at the time, and the method gave so much pain and annoyance that after the second unsuccessful attempt at reduction I resected the condyles of the humerus through two lateral incisions (in preference to the posterior triceps cut), brought the ulna into position and secured a useful movable joint. A letter received last week states that the fetus was carried to full term, and that the elbow movements are nearly perfect, although strength is impaired.

Head of the Radius: An old dislocation of this joint is often difficult to replace, but extension, strong pressure and rotation will sometimes accomplish it. If unsuccessful, the joint should be opened, replaced and stitched or resected.

Fig. 1.—Lateral dislocation of elbow, four months' duration.

Clavicle: In an old dislocation of the outer end of the clavicle, Hopkins was able to hold it firmly in place by carrying an X-shaped suture of silkworm through two drill holes in each bone; silver wire would answer the same purpose, or a firm nail could be used.

Jaw: In a three-month-old dislocation of the jaw Mixter applied lever extension with the fulcrum opposite the molars, and after forty-five minutes was able to reduce the dislocation.

Thumb: In old dislocations of the phalanges, where the head of the bone has passed between the tendons, these dense structures often resist all efforts at replacement and open incision is imperative.

AFTER-TREATMENT.

Passive movement should be instituted very early after reduction, and after operation in all old luxations. Electricity, massage, voluntary and involuntary muscular movements, gymnastics and other measures for the restoration of function must be continued for a long time.

CONCLUSIONS.

1. Early immediate diagnosis is the most important element in preventing the existence of old unreduced dislocation. With ether, the *x*-ray and anatomic and surgical knowledge, a recent displacement ought always to be discovered by the surgeon. Immediate reduction by manipulation or open operation should follow.

2. An old, unrecognized dislocation should be carefully examined under the *x*-ray and ether to discover the extent of adhesions and the possibility of effecting reduction without extreme measures. The manipulations to be practiced are practically the same as those employed in recent luxations, but greater caution is necessary. Failing in these, continuous extension in bed should be practiced for a week; the second attempt, without the application of extreme force, should then be made, the permission of the patient having been previously obtained to permit of open operation, if deemed necessary.

3. Open section should include the division of all muscular, tendinous, capsular and bony obstacles to reduction. When the socket is filled up with dense fibrous tissue, such tissue should be excavated, and the head of the bone placed *in situ*.

4. Partial or complete excision of the head and of fragments in case of fracture will frequently be necessitated.

5. In cases that have existed more than a year, or where the original injury has been extreme, operation should be avoided unless pressure on nerves or blood vessels is seriously impairing the usefulness of the limb or giving pain, but resection should be practiced in bad late cases, with pain and serious nerve symptoms.

6. Sepsis is frequent on account of the severity and length of the operation, and especially by reason of the non-resistive ability of the tissues due to the original injury and to repeated traumatisms from manipulative efforts.

7. Pain, disability, age and occupation are the most important conditions in arriving at a decision concerning operation. When a limb is useful in its new position, gives no pain or difficulty, it should be let alone.

8. In the after-treatment, muscular gymnastics, electricity, voluntary and involuntary muscular movements and massage are very important measures and should be persistently employed. These manipulations require both patience and pluck on the part of the patient.

DISCUSSION.

DR. A. F. JONAS, Omaha—My personal experience with old dislocation of the joint is limited almost entirely to the shoulder joint, of which two years ago I reported seven cases. Of these, six were operated on and one was not. One feature of the operative cases was common to all, and that was the contraction of the capsule. The first of the series had remained unreduced for three or four months. I began to use Kocher's manipulations, and it became reduced by this method. The remaining seven cases were reduced by manipulation. The structures which opposed reduction varied with each case. In one the coracoid process was broken off and had become adherent in its new locality. Before it could be replaced it was necessary to remove this broken off portion of the coracoid. In another case the long tendon of the biceps stood in the way of reduction, but the contracted capsules of the joints gave most trouble. Extirpation was necessary in one of the cases. Usually the head of the bone was replaced, but in most of the cases we injured the circumflex nerve, owing to the amount of manipulation. We could not always locate it, and in most of the cases we had atrophy of the deltoid muscle. Strangely, the mobility of the scapula is such that all of these cases were able to perform the duties to which they had been accustomed. There were no deaths, and the recoveries were all by primary union. So far as adhesions to other joints are concerned, I only recall one of

dislocation at the head of the radius which had exisited for four or five months. I had to cut down on the head of the radius to replace it in its normal position.

DR. C. E. THOMSON, Scranton, Pa.—I will report one case of dislocation of the hip. My patient, a miner, was injured last June by being run over by a mine car. The leg was lacerated and was amputated five weeks later four inches below the knee. At that time the dislocation of the hip remained undiscovered. He came to me last February, when I attempted to reduce his old dislocation. I used the Allis method of fixation of the hip. While Dr. Allis recommended it so enthusiastically for experimental work on the cadaver, he was a little chary about recommending it on the living patient. We used it most energetically, without any injury to the patient further than slight excoriations. After the most energetic manipulations we failed to reduce the dislocation. Having failed by the Allis method, we tried the Kocher method, with disastrous results. Notwithstanding that we had but a stump to manipulate, we broke the bone between the trochanters—an oblique fracture—by the Kocher method. Ten days later we renewed the attack and succeeded in reducing the dislocation with long, blunt hooks similar to those used for handling meat. We used anterior and posterior incisions similar to Hoffa, and the patient made a good recovery. The fracture was held in place by a specially devised nail. Union has taken place in the fracture, and we hope he will have a useful stump.

DR. A. D. BEVAN, Chicago—Five years ago I reported a series of cases of old dislocations reduced by operative methods, and in practically all of them we had a complicating fracture. The dislocations of the shoulder had no complicating fracture. If reasonable efforts at reduction by mechanical means fail, then an *x*-ray should be taken to see if there is a complicating fracture. It is impossible to make an incision in such a direction as to expose the acetabulum before you expose the end of the femur. The capsule should be exposed and freed before the head is exposed. As to the importance in the work of operation on old dislocations of the elbow of sacrificing the triceps tendon, if you expose the joint you will almost invariably find a piece of bone preventing reduction. I have obtained better results since I have paid attention to this. I do not think I have injured the circumflex nerve and produced resulting paralysis, but I rather think we have had an ankylosis, with an atrophy of the deltoid from lack of use. I believe that where great force is necessary to reduce an old dislocation of the shoulder we are more apt to obtain a satisfactory result by resection of the head of the bone.

DR. J. A. BLAKE, New York City—I have had very little experience with old dislocations of the hip, but have treated several of the shoulder, and I am inclined to operate rather than make prolonged or forcible attempts to reduce by mechanical means. I split the fibers of the deltoid as near its anterior border as possible in order to avoid injuring its nerve supply. If this does not afford sufficient access, a supplementary transverse incision is made just below its attachment to the acromion, which also preserves the integrity of its nerve supply. Excision of the head of the bone may be done in some cases. After removal of the head the functional result is often excellent. I have recently seen a resection of four inches of the humerus for new growth, and the result has been almost perfect as regards function. As to the elbow, lateral incisions give the best access.

DR. G. T. VAUGHAN, Marine-Hospital Service, Washington, D. C.—We are all agreed that there should be no old dislocations of the shoulder; if one can not reduce them one should operate at once. Sometimes this is not done, and they come for treatment. I had one case of this kind in which the detached greater tuberosity of the humerus was located directly over the glenoid cavity. Several attempts had been made to reduce it, and it was thought with success, but the patient continued to suffer great pain for two months. I tried all the various methods of manipulation before cutting. I do not approve of the method of placing the foot or the hand in the axilla, having on two occasions fractured a rib by using the foot in the axilla as a fulcrum. I made an incision and found the glenoid cavity filled with bone. On locating the head of the humerus, I found this bone was the detached greater tuberosity, which had to be dissected out from its attachments over the glenoid cavity. Extension and counter-extension is the best method by which to treat these cases, as it is least likely to do harm, and if it fail can be followed by Kocher's or some other method.

DR. J. P. LORD, Omaha, Neb.—We should take our cue from the recent experience of the orthopedists and adopt the suggestions voiced in last year's orthopedic association rather than resort to excessive force in order to reduce these dislocations. It has been my recent experience that this facilitates the reduction of the head of the femur, and it is my belief that injury of the nerves and blood vessels, nerves especially, is produced more by the effect of the lever action which we produce in our manipulation than by the traction. If we overcome this resistance by tenotomy and not exert this pressure on the nerves as we do with our forced manipulation evils, we will not produce these dire consequences. We should not operate immediately after severe traumatism has been produced by this bloodless reduction. Dr. Willard did not emphasize that sufficiently. Consent to open operation should be obtained if manipulative methods fail. I do not think we should undertake the operation until after severe manipulative measures have been resorted to.

DR. CHARLES A. POWERS, Denver—A number of years ago I saw many unreduced dislocations of the shoulder at the Chambers Street Hospital in New York, and so far as I can remember none which had been out more than ten or twelve weeks was replaced without operation. At that time I carefully studied the paper of Kocher, which many of you remember reading fifteen or twenty years ago and in which he stated that old dislocations could be reduced by his well-known manipulative methods. I was never quite able to understand Kocher's reasoning or his results in old dislocations. The adhesions must be thoroughly broken up before reduction by any method of manipulation. The breaking up of adhesions must be done, however, with utmost caution. I am heartily in accord with Dr. Willard in thinking that open operation should be resorted to more frequently. I would like to put on record a case of intracoracoid dislocation of the shoulder of four months' standing which, to my surprise, was easily replaced after from eight or ten minutes of manipulation. This was in a woman of over 60 years, a patient of Dr. P. V. Carlin of Denver. Where an old luxation can be replaced by manipulation it is, of course, best to do so, but we are always to bear in mind the dangers attending too forcible manipulative effort.

DR. WILLARD—Anklyosis of the shoulder joint is an unfortunate condition, especially for a woman, and resection of the head of the humerus is often preferable. The breaking up of adhesions in an old dislocation is the most dangerous part of a reduction. Open arthrotomy with resection of the fragments is often the better operation.

Foam-Producing Power of Urine; Aphrometric Test.—A Bignon of Lima, Peru, calls attention to a means of testing the urine by its power to produce a durable foam when shaken up with water and acetic acid. The *Boletin de la Academia Nacional de Medicina*, 1904, iv, No. 1, contains his communication on the subject with detailed accounts of his tests. He establishes as the standard the number of cubic centimeters of the urine for one hour, diluted with water to 200 c.c., which will produce a foam lasting for half an hour when shaken up for one minute with 100 c.c. of a solution of acetic acid (15 c.c. of acetic acid to the liter of water). In normal conditions about 1.5 c.c. to 3.5 c.c. of urine are required to produce this result, but in abnormal urine a much smaller amount is sufficient. When the foam can be induced with less than 1 c.c. of urine, it should be regarded as suspicious. He is now studying the application of the test to milk, wines, etc. He calls it the aphrometric test, from the Greek word *aphros*, foam. The term aphrodisiac is derived from the same root, from the legend that Venus (Aphrodite) was born from the foam of the sea.

AUTOCHTHONOUS SINUS THROMBOSIS OF THE CEREBRAL DURA.

WITH A REPORT OF THREE CASES.*

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While secondary thrombosis, such as follows middle-ear disease, has elicited great interest and been carefully studied in recent years, especially on account of its surgical treatment; the primary form, the autochthonous sinus thrombosis, because of its indefinite symptomatology, its uncertain treatment and its comparative rarity, has received much less attention.

Since the year 1899 there have come under our observation three cases of autochthonous sinus thrombosis.

The first case, reported by Drs. Wadsworth and Spiller,[1] is as follows:

CASE 1.—The patient, a boy, aged 7 years, according to his mother's account, had always been in good health and had been bright at school. On March 3, 1900, at 1:30 p. m., he complained of headache and vomited, at 3 p. m. he became unconscious, and at 9:20 p. m. he was taken to the hospital. At that time he was still unconscious, the veins of his face were engorged, the pupils dilated and immobile, the pulse weak and rapid, and the respirations slow and irregular (Cheyne-Stokes type). The temperature varied from 99.4 to 100 degrees Fahrenheit. Cyanosis was not present. He reacted to irritation with a pin. Death occurred at 12:30 p. m. the following day, March 4.

Autopsy.—At an autopsy held on the same day nearly a pint of clot and fluid was found in the ventricles of the brain, and a clot was found partially occluding the jugular foramen on the left side. Further examination showed that a clot had formed in the united veins of Galen at their union with the straight sinus. The thrombus was oval in shape, about three-quarters of an inch long by one-half inch wide, and consisted, as shown by the microscope, of recently clotted blood.

The superior longitudinal sinus was entirely occluded and calcified in its middle portion. This occlusion was probably the result of a previous thrombosis. The blood from the anterior portion of the superior longitudinal sinus had formed a new passageway between the layers of the falx cerebri. This passageway was not lined by endothelial cells, and conveyed some of the blood from the superior longitudinal sinus to the straight sinus at its junction with the inferior longitudinal sinus, and some of the torcular Herophili. The thrombus formed in the united veins of Galen had evidently caused the hemorrhage into the lateral ventricles and death.

The second case was reported by Dr. S. McC. Hamill,[2] and is included here because Dr. Hamill gave the brain to us for microscopic study. His clinical notes abbreviated are as follows:

CASE 2.—No history of syphilis in the mother was obtained. The patient was born normally and was not asphyxiated. The temperature was slightly elevated from the second day after birth. On the seventh day after birth a papular eruption developed on the face and the temperature rose to 104 degrees. There was no gastrointestinal disturbance. On the fourteenth day marked twitching of the muscles of the right eye and constant lateral rotation of the head were observed. General convulsions did not occur. The child was somewhat cyanosed and nursed poorly, but did not cry. The next day the child was somewhat better, but on the sixteenth day the temperature rose to 106.8 degrees and he vomited a large quantity of altered blood and passed several tarry stools. The face became much cyanosed. Death occurred on the same day.

Autopsy.—At the autopsy, twenty hours later, several thrombi were found in the umbilical arteries. The liver was abnormally large. The brain showed a large mass of clotted blood overlying the left hemisphere, more marked anteriorly. This extended into the substance of the brain, causing some destruction of tissue. Overlying the left hemisphere was a less marked hemorrhage.

The superior longitudinal, the left lateral, the straight sinus and the veins of Galen contained firmly organized thrombi. The veins of the brain were distended with blood and some of the superior cerebral veins, on the left side, contained thrombi. Both lateral ventricles were dilated and contained considerable blood, especially the left.

Microscopic Examination.—There was no round-celled infiltration of the pia mater, of the medulla oblongata or cortex, and the walls of the blood vessels were not thickened. The pia about the medulla oblongata was infiltrated by a great number of red blood corpuscles, as was also the optic chiasm. The optic chiasm did not stain well by the Weigert hematoxylin method, probably because it had been kept in formalin. There was no cellular infiltration about the blood vessels of the cortex. Sections taken from portions of the cortex showed numerous minute hemorrhages and intense congestion of the capillaries of the tissue. The extensive hemorrhage had destroyed the upper part of the cerebral hemispheres, including the paracentral lobules, so that the Betz cells could not be studied.

A third case is a recent observation. The clinical notes obtained from the case-book of the Pennsylvania Training School for Feeble-Minded Children, of which institution the child was an inmate, are as follows:

CASE 3.—S. M., female, 15 years of age at the time of her death. Seven years previously it was noted that her gait was peculiar and was described "as if she were walking on eggs." This probably means that the child was spastic. There was unilateral exaggeration of the knee jerk. Mentality was low and vision was imperfect. Epileptic attacks occurred and usually began in the arms and face, finally involving the entire body.

Aside from her mental condition, which steadily deteriorated, there was no change noted until four months before her death, when it was observed that while not unable to walk, she disliked to do so and kept her chair as much as possible. Her sight had become still more defective and co-ordinate movements were impaired, although the grade of imbecility prevented accurate tests. No areas of anesthesia were found. The child was peevish and prone to cry without cause.

Her condition gradually became worse until locomotion was impossible. In bed, her thighs were flexed on her abdomen and her legs on her thighs. During the last three weeks of life great swelling of the feet with a tendency to the formation of blebs was observed. Speech was impossible for three weeks prior to her death, and for the last five days lifting her chin and so permitting fluids to gravitate to the stomach was the method of feeding her. Rise in temperature did not occur until the day before her death. Her heart action, pulse and respirations were regular and normal.

A record of the number of epileptic attacks shows that in 1901 she averaged eight per month, the highest number in any month was eighteen and the lowest was three; in 1902 she averaged the same, but the highest in one month was sixty-five and the lowest was two; in 1903 she had forty-three attacks in January, eight in February, three in March and nineteen in April. She died May 18, 1903.

Autopsy.—At the necropsy made May 19, the brain was found to be very edematous. The superior longitudinal sinus, one lateral sinus and the veins of Galen were thrombotic

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1. Proceed. of the Path. Soc. of Philadelphia, Oct., 1900, p. 267.
2. Archives of Pediatrics, 1903, p. 264.

Many of the blood vessels on the superior surface of the brain were occluded and a small collection of purulent matter was found about one of the blood vessels of the parietal lobe. The brain weighed 1,000 grams.

There were no signs of the thymus gland.

The right lung was not especially congested. It was crepitant. No distinct tubercles were found. It weighed 170 grams. The left lung was much more congested and appeared to be in a state of red hepatization. The upper lobe was congested, but not so much as the lower. A piece of the lower lobe sank when placed in water. The left lung weighed 280 grams.

The heart was not especially fatty. A chicken fat clot was found in the right ventricle and one also in the left auricle. The valves were normal. The weight of the heart was 145 grams.

The liver was not enlarged, but moderately congested.

The kidneys and spleen were normal.

The lower limbs were somewhat atrophied. The spinal cord, examined macroscopically, appeared normal.

The brain and cord with their membranes were removed and preserved for microscopic study.

Sections from the paracentral lobule from each side showed considerable round-celled infiltration of the pia, with the blood vessels greatly congested and their walls thickened. The capillaries of the cortex, especially on the left side, were unusually prominent and a moderate round-celled infiltration was found about them. The Betz cells were apparently normal.

Within a blood vessel taken from the cortex was found a large mass consisting chiefly of multinuclear cells; about this blood vessel there was a slight round-celled infiltration. Another blood vessel showed a marked cellular infiltration about it. The cells here were multinuclear and had probably migrated from the blood vessel. A blood vessel from the choroid plexus was surrounded by a very intense cellular infiltration, the cells being chiefly multinuclear. The blood vessel in this section was occluded by a dense mass consisting apparently of fibrin. A section from the left lateral sinus showed the sinus filled with a partially organized thrombus; no endothelial lining was found. The optic chiasm was not degenerated, but a moderate round cell infiltration was found in the pia about the chiasm.

The right and left third cranial nerves were normal.

A moderate amount of round cell infiltration was found in the pia mater of the medulla oblongata and the walls of the blood vessels here were much thickened. The anterior pyramids were fairly well stained by the Weigert hematoxylin method.

Sections through the cervical enlargement showed no distinct round cell infiltration of the pia, and the nerve cells of the anterior horns appeared normal. The crossed pyramidal tracts were very distinctly, but not intensely, degenerated. The direct pyramidal tracts, by the Weigert hematoxylin method, were not affected.

The mid-thoracic region showed the same degree of degeneration of the crossed pyramidal tracts as was seen in the cervical region. Cellular infiltration was slight throughout the spinal cord.

The degeneration of the crossed pyramidal tracts extended down into the lumbar region, and disappeared upward in the medulla oblongata. The microscopic examination showed the presence of lesions like those of cerebrospinal syphilis. The disease was probably hereditary in this case, and in all probability had caused the thrombosis of the dural sinuses.

These three cases belong distinctly to that class in which the thrombosis is due to a general bodily condition. Primary sinus thrombosis, or that form which is not due to direct extension of disease processes of the face or head, has excited a certain amount of interest during many years.

Th. v. Dusch[3] collected 58 cases of sinus thrombosis, of which 32 were due to gangrenous, erysipelatous or suppurative inflammation of parts of the body whose vessels are in close connection with the sinuses. In 4 the thrombosis appeared to result from tumors, etc., causing pressure on the sinuses or internal jugular veins. Fifteen cases were supposedly caused by lessened circulation from debilitating diseases, especially in those already in feeble health, as in children or the aged. In 6 cases no cause could be ascertained. One case he added as a supplement to his paper.

Comprehensive papers on the subject of sinus thrombosis have also been written by Lancial[4] and by J. A. Lidell,[5] the latter author having collected a number of cases. Lancial collected 7 cases from the literature, which he considered as cachectic in origin, i. e., as produced by a debilitated condition of the organism. The cases that he collected were those reported by Tuckwell,[6] Corazza,[7] Wiglesworth,[8] Rotch[9] and Grancher.[10] Rilliet and Barthez[11] reported 18 cases, and Bouchut[12] 35 cases of cachectic thrombosis.

In addition to the cases referred to above, we have studied cases reported by Fisher,[13] Trevithick,[14] Hölscher,[15] Nonne,[16] Meigs,[17] Good,[18] Voss,[19] Ehrendorfer,[20] Richardson,[21] Hoffman,[22] Reinhold[23] and Phear.[24]

Primary sinus thrombosis is regarded by some as especially a disease of childhood and old age, the two extremes of life when the animal organism is least prepared to stand the strain of debilitating influences. The predisposing causes are variously given. Von Monakow[25] gives as the causes long-continued diarrhea, especially in children, great loss of blood, long-continued suppuration, carcinoma, tuberculosis, chlorosis and anemia.

According to Oppenheim,[26] primary sinus thrombosis is, as a rule, a result of cardiac weakness; it is, therefore, called marasmic. He also states that in children it is generally due to exhausting diarrhea, and in adults may develop in the terminal stage of exhausting diseases—tuberculosis or carcinoma; more rarely in the course of the acute infectious diseases. He mentions Bollinger as having established the fact that chlorosis often produces a sinus thrombosis.

Bouchut,[12] in his statistics of cases occurring in children, gives the following table of causes:

Chronic enteritis	5 cases.
Measles and catarrhal pneumonia	2 cases.
Chronic pneumonia	5 cases.
Phthisis	8 cases.
Anasarca without albuminuria	1 case.
Chronic albuminuria	3 cases.
Pertussis and pneumonia	7 cases.
Gangrene of the mouth	1 case.
Diphtheria	2 cases.
Scrofulous cachexia, tuberculosis of bones, lungs and intestines	1 case.

Bouchut calls attention to the fact that 23 out of the

3. The New Sydenham Soc., vol. xi, p. 81.

4. "De la thrombose des sinus de la dure-mère," Paris, 1888
5. Amer. Jour. of the Med. Sci., January and July, 1874.
6. St. Bartholomew's Hosp. Reports, 1874, p. 35.
7. Schmidt's Jahrbuch, 1866, p. 324.
8. Jour. of Mental Science, 1885, vol. iii, p. 371.
9. Boston Med., 1883, p. 174.
10. Grancher, unpublished, cited by Lancial (l. c.).
11. Cited by v. Dusch.
12. Cited by Lancial.
13. British Medical Journal, 1900, vol. ii, p. 9.
14. British Medical Journal, 1897, p. 1166.
15. Weiner klin. Rundschau, 1902, p. 561.
16. Mittheilungen aus den Hamburg Staatskrankenanstalten.
17. Meigs: Trans. of the Coll. of Phys. of Phila., 3d ser. vol. iii.
18. Neurologisches Centralblatt, 1902, No. 8, p. 340.
19. Deut. Zeit. fur Nervenheilkunde, vol. xv, p. 297.
20. Weiner Med. Presse, 1892.
21. Jour. of Nervous and Mental Dis., 1897, p. 404.
22. Zeit. für Ohrenheilkunde, vol. xxx.
23. Cited by Voss.
24. Ibid.
25. Gehirnpathologie, Nothnagel's Sys. of Spec. Path. and Therap. vol. ix.
26. Lehrbuch der Nervenheilkunde, 3d edition, p. 763.

35 cases he studied developed after pulmonary affections.

Fourteen of the cases that we have collected from the literature, including our own, were in children. The predisposing causes in these cases were pulmonary affections in 3 cases; long-continued suppuration in 2, and diarrhea, tubercular peritonitis and marasmus in one each. In the other 6 cases there was no history of any predisposing cause, the cerebral symptoms being the first sign of ill health. It is possible that in two of these six cases, namely, the case reported by Hölcher[5] and in our first case, where the blood from the superior longitudinal sinus had formed a new passageway between the layers of the falx cerebri, which was not lined by endothelium, that the abnormal circulation predisposed to thrombosis.

Murchison[27] is said to have been the first to call attention to the fact that sinus thrombosis is found at autopsy when death is due to syphilitic cachexia. He reported 2 cases, both of acquired syphilis; one in a woman, 27 years old, who had extensive syphilitic deposits on the dura and whose sinuses were full of "dark red coagulum." In the other, a gummatous deposit was found on the inner surface of the dura, extending about the left lateral sinus, the lumen of which was obliterated. Murchison himself does not attribute the thrombosis to syphilis *per se*, but mentions its presence only incidentally; as in both his cases there was extensive necrosis of the cranial bones and disease of the dura, it might be questioned whether these two cases could be considered as instances of primary sinus thrombosis.

In our third case there were signs of cerebral syphilis, and this disease was probably the cause of the sinus thrombosis. It seems as though *a priori*, syphilis, whether hereditary or acquired, would be a likely cause of sinus thrombosis, though neither v. Monakow nor Oppenheim speaks of it.

The degeneration of the pyramidal tracts in our third case is very uncommon in sinus thrombosis.

Childbirth sometimes causes thrombosis of the sinuses, probably more often when there is copious hemorrhage, as in a case quoted by v. Dusch. In this case peritonitis also was present.

Chlorosis or anemia has been the cause in several cases, the anemia lasting from one to six months and followed by the sudden onset of cerebral symptoms and death.

In a case reported by Ogle, long-continued disease of the rectum was the only discoverable cause. A short time before the patient's death the power of speech was lost, but no other symptoms were observed. She died of asthenia, and at the autopsy thrombosis of the superior longitudinal and left lateral sinuses was found. The inferior longitudinal sinus and the venæ Galeni were found partially obstructed.

Ogle[28] also reports a case of sinus thrombosis following pneumonia in a young man aged 26. He suddenly became unconscious and hemiplegic. At autopsy the superior longitudinal, left lateral and left petrosal sinuses were filled with a firm, reddish-brown and tightly adherent clot. The cerebral veins were all engorged. The brain substance was softened in places, and in the posterior and inferior part of the left middle lobe of the cerebral hemisphere was an abscess the size of a hazelnut.

A case mentioned by v. Dusch,[1] in a girl aged 12, who developed thrombosis of the superior longitudinal sinus during an attack of typhoid fever, probably belongs also to that class of cases where thrombosis of the cerebral sinuses occurs during the course, and usually near the termination of an acute infection. In the second case described in our paper, a baby two days old, the clinical history pointed to a general infection, which was followed by the sinus thrombosis.

In connection with those cases caused by anemia, a case reported by Nonne[16] is of interest. A woman had a large uterine myoma. Probably from the metrorrhagia caused by this, she became anemic. A little later she suddenly developed cerebral symptoms, and died in four days. The autopsy showed thrombosis of the superior longitudinal and lateral sinuses. The cortex was hyperemic, but there was no degeneration of the brain substance.

In a case reported by Wiglesworth,[8] dementia was present, and this condition, he thinks, may have caused the thrombosis, but the development of severe pulmonary symptoms before the appearance of the cerebral, and the presence of pulmonary lesions at the autopsy, make his conclusion doubtful. In another case, reported by the same author, the patient became insane for six days, and then died suddenly. At the autopsy a sinus thrombosis was found which, from its appearance, might have been several days old. A recent hemorrhage into the ventricle was also found. He thinks that in this case the acute insanity was a symptom of the thrombosis, and that death was due to the hemorrhage. The patient had previously been in good health, and there was no known cause for the thrombosis.

When it comes to a consideration of the immediate cause of the thrombus formation in the sinuses, we are on a very uncertain footing. Various theories have been advanced, all of which lack definite proof. Von Monakow[25] thinks that sinus thrombosis gives a well-defined symptom-complex, and yet he speaks of its resemblance to meningitis. He makes two groups of sinus thrombosis—the marantic and that depending on inflammation of the cerebral veins or the pyemic form. He says that the slowing of the circulation in the brain, such as may occur in those afflicted with carcinoma, in emaciated children, in the aged, etc., has been supposed to cause thrombosis, especially if the cardiac action is weak. This view is at present far from proof.

Baumgarten has shown that blood in a vein tied at each end so that all circulation is prevented, may not coagulate even after weeks, provided the occlusion has been made aseptically and the sinus wall is healthy. The same blood, even after weeks, will coagulate if removed from the sinus, so that, as shown by Brücke, blood remains fluid if it is in contact with a living healthy vessel wall, even if the vessel is tied.

Von Monakow[25] says that there is no doubt that thrombosis of the cerebral sinuses and veins occurs after long-continued diarrhea in small children, after great loss of blood, in long-continued suppuration, in persons with carcinoma, tuberculosis, typhoid fever etc. The coagulation, however, does not depend on the feebleness of the circulation, nor the supposed thickening of the blood, but on changes in the walls of the vessels (loss of endothelial lining). Zahn has shown that the endothelium may be lost from chemical and thermic causes, that are active in marasmus. He thinks, also, that the death of certain elements of the blood, white blood corpuscles, or the blood plaques may cause sinus thrombosis, as in chlorosis. Virchow, years ago, showed that in a large number of cases the coagulation of the

27. Trans. Path. Soc. of Lond., vol. xiii, p. 250.
28. Trans. Path. Soc. of Lond., vol. vi, p. 30; also vol. x, p. 81.

blood precedes phlebitis, and that phlebitis followed by coagulation rarely occurs.

Recent investigations in the coagulability of the blood by Leo Leob[29] gave some important results that bear on this subject. This author found that the presence of certain bacteria or their toxins in blood plasma increased its coagulability in test-tubes, and also in the peritoneal cavity. There was a difference in this activity according to the bacteria used; for instance, the staphylococcus pyogenes aureus was more active than the bacillus coli. The absorption into the blood of tissue fluids increases the coagulability of the blood plasma. A piece of muscle put into fresh-blood plasma increases its coagulability. The same is true when a piece of blood vessel is placed in the plasma. This action is, to a certain extent, specific, tissues from the same kind of animal as the one from which the plasma was obtained being more effective.

It has not been proved that the endothelium exerts an inhibitory effect on the coagulation of the blood, but probably acts merely by preventing absorption of certain constituents from the tissues; and it also produces a smooth surface much in the same way as paraffin would, only much better. It seems most likely that in all these cases the coagulability of the blood is increased either by the presence of bacterial toxins or bacteria, or by tissue products.

Virchow pointed out that the most commonly observed seats of sinus thrombosis are the cranial sinuses and the veins of the lower extremities and of the true pelvis, and that the reasons therefor are anatomic. The fact that there are numerous fibrous bands crossing the cranial sinuses; that the sinuses are triangular in shape instead of circular, as are other blood vessels, thereby causing increased surface and so increasing resistance; that the tributary veins enter the superior longitudinal sinus at a right angle or sometimes even an obtuse angle to the course of the blood current; that in the cranium there is no muscular action to accelerate the current, and that the sinuses *in situ* are held open by their adhesions in spite of a diminished quantity of blood, are all factors that tend to produce a stasis in the blood current.

In connection with the etiology, it is well to say that there are many cases reported which might have been regarded as primary, except for the complete history or postmortem examination, such as those caused by a furuncle on the face, the removal of a nasal polyp, an abscess of the antrum of Highmore, etc.

In the primary form the superior longitudinal sinus is the most frequently affected. This is in great contrast to those cases that are secondary to otitis media, in which the lateral sinus is chiefly affected. Thrombosis, which is secondary to nasal or facial conditions, frequently occurs in the superior longitudinal sinus.

In the primary form, the superior longitudinal sinus is not the only one affected. The thrombosis may be very extensive, and involve all or nearly all the dural sinuses. The superficial veins are generally congested and may be thrombosed, and the same is true of the veins of the choroid plexus. In some of the cases extensive hemorrhage had occurred into the ventricles, and was the immediate cause of death; in other cases the ventricles were free, but cortical hemorrhages were found; in still other cases no hemorrhage was seen anywhere.

Abscess, or areas of softening, are rarely reported in primary thrombosis.

In the third case of our paper the endothelium of the superior longitudinal sinus was destroyed.

The appearance of the thrombus is very variable, according to its age. It may be a dark red coagulum, or it may be completely organized so that the sinus resembles a fibrous cord.

29. Personal communication.

A CASE OF EARLY ACUTE PANCREATITIS WITHOUT HEMORRHAGE.*

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AND
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BOSTON.

Of the many cases of acute pancreatitis reported in the literature, most present quite advanced lesions. The largest number are examples of hemorrhagic or of necrotizing pancreatitis with extensive destruction of the organ. A few are cases of focal suppurative lesions. The study of these cases has not thrown great light on the etiology and histogenesis of the lesions, but our present knowledge of the condition has been gained mainly from animal experimentation.

In animals the pancreas has been treated in a great variety of ways. Some of these, as injections of chromic acid, present conditions which manifestly play no part in the causation of the natural disease in man. Others, such as injections of digestive ferments (papain), bacteria, gastric juice or bile, imitate conditions that, to say the least, might occur in man. Of these the entrance of bile seems to offer the most satisfactory explanation of many of the cases of acute pancreatitis, and it has been given first place in the etiology of the disease.

Cases in man showing very early lesions are rare and yet from these alone can the correctness of the deductions made from animal experiments to the natural disease in man be proven. This case is reported because it shows an early lesion and presents certain peculiarities not generally found in other cases. Furthermore, there is no evidence of bile having entered the organ, and the inflammatory lesions are unassociated with hemorrhage.

The clinical narration of the case is as follows:

History.—Katherine L., age 29, married, was admitted to the surgical side of the Boston City Hospital on the service of Dr. Gavin,[1] with a provisional diagnosis of appendicitis. Family history negative. Past history shows no severe illness or accident. Last catamenia four months ago. Constipated for past few weeks.

Present Illness.—Three days before entrance gradual onset of moderately severe pain in left lower abdomen, becoming general in a few hours. Pain extreme and most severe in epigastrium. Patient vomited several times daily. Vomitus consisted of food ingested and was at times bile stained. Chill two days previous lasting about half an hour. Last movement of bowels four days previous. No change in urine noted.

Examination.—Well developed, obese. Temperature 101.2 degrees; pulse 110, of poor volume and tension. Tongue dry, with thick brownish coat. Skin pale, with a slight yellowish hue. Decided pallor of mucous membranes. Heart sounds faint, no murmurs audible. Lungs negative. Abdomen not distended. Slight general tenderness, which is marked in epigastric and right hypochondriac regions. No mass to be felt. General normal tympany. No dullness in flanks or evidence of free fluid. No edema. Moderate muscular spasm above umbilicus. Liver dullness from fifth rib to two inches below costal

* Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. V. C. Vaughan, Frank B. Wynn and Joseph McFarland.

1. We are indebted to Dr. Gavin for the privilege of using the clinical history of this case.

margin. Edge of liver is smooth and not tender. Spleen not palpable. Vaginal examination shows normal vagina with a lacerated cervix and a somewhat enlarged uterus. Urine: A slight trace of albumin; no sugar; sediment not examined. Blood not examined.

Treatment and Course.—Patient was given a high enema with fair result and strychnia, gr. ½, every few hours. She seemed considerably relieved by the enema and was comfortable until 9:30 p. m., when she became thirsty, restless and with a rapid and irregular pulse. At this time she vomited and symptoms of collapse became more extreme. Active stimulation failed to give any reaction and death occurred about 3:30 a. m.

Diagnosis.—As the patient was under observation only ten hours there was little time for careful study and no definite clinical diagnosis was made. Gallstones, gastric ulcer, pancreatitis and appendicitis, with abscess of the liver, were considered in the differential diagnosis. Absence of liver tenderness, together with regular contour, though not excluding liver abscess, made the possibility less likely. It was impossible to exclude the other three conditions, but the rapid onset of collapse without any evidence of hemorrhage made the diagnosis of acute pancreatitis more probable than anything else.

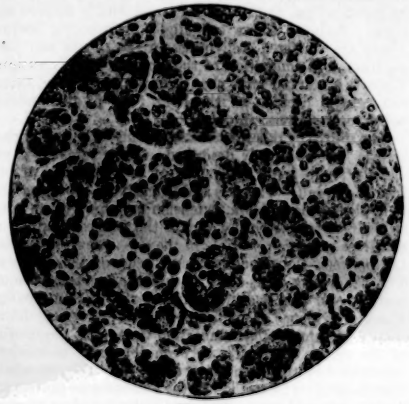

Figure 1.

Autopsy.—The examination was made twenty-three hours after death. The body was of a well developed, well-nourished woman, 153 cm. long; abdominal panniculus, 5 cm. thick.

Peritoneal Cavity: Omentum was long, completely veiling viscera and contained much fat, as did the mesentery. No fat necroses were found. No fluid was present in cavity. Mesenteric lymph nodes not enlarged. Appendix normal, 11 cm. long, below cecum directed toward mid line, slightly curved. It had a mesentery for entire length, which except at distal end was very short. Lesser peritoneal cavity normal. Pelvis normal.

Pleural Cavities: Right lung slightly bound to parietes laterally and posteriorly by fibrous adhesions. Left normal. Pericardial cavity was normal.

Heart: Weight, 285 gms. Just beneath the epicardium over base of heart are numerous ecchymoses, 1 to 3 mm. in diameter, and of slightly irregular contour. Heart otherwise normal. Frozen section showed no fat droplets in fibers when treated with glacial acetic acid.

Lungs: Right shows few fibrous tags. At base of both few small ecchymoses beneath pleura. Lungs otherwise normal. Bronchi and peribronchial lymph nodes normal.

Spleen: Weight, 75 gms. Surface slightly wrinkled and showed numerous small irregular, slightly elevated whitish patches. Except for this, normal.

Gastrointestinal Tract: In tissues about lower end of esophagus there had been a slight hemorrhage. The gastric mucosa was in many places hyperemic and there were many minute submucous ecchymoses. Duodenum more hyperemic and along tops of mucous folds dark red. Other parts of tract pale and contracted.

Pancreas appeared normal, though numerous parallel cuts were made through it.

Liver: Weight, 1,690 gms. Smooth. On section, grayish red, with scattered small paler areas. Markings indistinct. Consistence normal. Gall bladder distended with dark bile, no stones. Ducts normal.

Kidneys: Weight, 310 gms. Capsule strips readily without tearing kidney substance. On section, cortex pale, grayish, with glomeruli visible as red points. Pyramids dark red with indistinct markings. Cortex, 9 mm. thick. Frozen section shows very great numbers of small fat droplets in tubular epithelium when treated with glacial acetic acid or stained with Sudan III or Scharlach R. Adrenals normal. Bladder normal.

Uterus was enlarged, fundus reaching about to level of pelvic brim. Softer than normal. Uterine veins distended with blood. Tubes and ovaries normal. Uterus contained a fetus

Figure 2.

lying in a sac 4 cm. in diameter. Surface of sac covered with innumerable short villi, giving it a velvety appearance.

The fetus was about 1 cm. long. Uterine mucosa thickened, red and softer than normal. Over an area about 3 cm. in diameter the mucosa is thicker than elsewhere, placental site. Vagina normal. Cervix slightly patulous. Aorta of small caliber, normal. The organs of neck, tongue, uvula, tonsils and brain were normal.

Cultures.—Heart's blood and lung, sterile.

Liver, spleen and kidney, bacillus of colon group.

Microscopic Examination.—Liver: The liver cells in the central half or two-thirds of each lobule contained many large vacuoles. Their cytoplasm took a deeper eosin stain than that of the cells of the periphery of the lobule. It was granular and many cells showed varying degrees of disintegration. Most nuclei of liver cells stained very faintly. In the capillaries between these cells, in the cells themselves and their remnants were many polymorphonuclear leucocytes with deeply-staining nuclei. Spleen negative.

Kidney: There was an occasional atrophied glomerulus and a few hyaline casts. In tubular epithelium there were numerous vacuoles grouped generally in the basal portion of cell.

Sections of liver, spleen and kidney stained by the Gram-Weigert method and with eosin and methylene blue showed no bacteria.

Uterus showed normal decidua, no other change. Fallopian tube normal.

Pancreas shows two forms of lesion, one diffuse, the other focal. The diffuse lesion consisted of the presence of polymorphonuclear leucocytes scattered between the acini of the pancreas. These lay in the small mount of interacinar connective tissue and only very rarely penetrated between the epithelial cells of an acinus (Fig. 1). The leucocytes varied in number in different sections, but only rarely were they found in large numbers in any given field. On the other hand, in only one section of a considerable number examined were they absent. In places they were scattered similarly in the interlobular connective tissue and between the fat cells (Fig. 2).

The focal lesion consisted of not very numerous scattered areas of necrosis and of cellular infiltration. The necrotic areas were generally quite small and as a rule involved the pancreatic parenchyma. In addition a few definite fat necroses involving small groups of fat cells were found. Into some of the larger areas of necrotic pancreas many polymorphonuclear leucocytes had wandered and there tissue disintegration was quite marked. These leucocytes stained poorly. In certain parts of the interlobular connective tissue polymorphonuclear leucocytes were present; in other parts, cells considerably larger than a polymorphonuclear leucocyte were found. These cells had a round or oval vesicular nucleus and a considerable amount of vacuolated cytoplasm. Both forms of cell infiltrated the interstitial tissue in scattered foci. In some places in the interstitial tissue there was a moderate amount of fibrin. Here and there a few red blood corpuscles appeared, but none of the lesions in the pancreas were hemorrhagic in character. Some sections show the capsule of the pancreas. In it are numerous polymorphonuclear leucocytes which frequently appear to be in lymph channels. From the capsule the leucocytic infiltration extended in places along interlobular septa into the pancreas (Fig. 3).

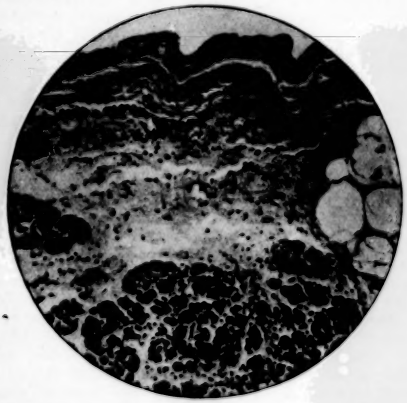

Figure 3.

In general the pancreas stained less well than the other organs. The acinar epithelium, except in the necrotic areas, however, showed no lesion. The islands of Langerhans were normal in appearance. The larger ducts frequently showed desquamation of their epithelium and in the lumen of the smaller ducts and acini a hyaline material was generally found. The interstitial tissue is not increased in amount. The blood vessels show as lesions.

Sections stained for bacteria by the Gram-Weigert method showed groups of organisms consisting of cocci, often in short chains and a less number of fairly large bacilli. These were sometimes found where there was leucocytic infiltration of interlobular connective tissue. Some were present in the capsule. Bacteria also occurred where there was no discoverable lesion of the tissue and some veins contained considerable numbers. Bacteria were not present in the larger lesions with definite necrosis or marked leucocytic infiltration, and they were not found scattered in the parenchyma of the pancreas. Of the bacteria present the greater number tinctorially and morphologically resembled streptococci.

Anatomic Diagnoses.—Early acute pancreatitis and peripancreatitis. Central necroses of the liver with leucocytic infiltration. Marked fatty degeneration of kidneys. Subpleural ecchymoses. Subpericardial ecchymoses. Submucous ecchymoses and congestion of stomach and duodenum. Slight periesophageal hemorrhage. Chronic fibrous pleuritis, right side. Chronic perisplenitis. Pregnant uterus.

REMARKS.

This case is one of acute pancreatitis of less than four days' duration from the onset of the first symptoms. The clinical history is a fairly characteristic one. Abdominal pain and tenderness most evident in the epigastric region occurs in a fat woman. This is accompanied by constipation, vomiting, fever, and finally marked collapse. Autopsy shows but slight macroscopic lesions. There are scattered ecchymoses in the pleura and pericardium, and congestion of the stomach and duodenum. There is a marked fatty change in the kidney and extensive central necrosis of the liver. All of the findings point to an intense intoxication.

The source of this intoxication seems to be in the pancreatic lesions already described. Their etiology is not clear. There is no indication of any entrance of bile into the organ. There is a duodenitis. Assuming this to be the primary lesion, extension may have taken place to the pancreas either by way of the pancreatic ducts or by direct extension possible in the close connection existing between the duodenum and head of the pancreas. The pancreatic ducts show no lesion other than desquamation, and this may be simply a postmortem change. There is evidence of an inflammatory process extending along the interlobular connective tissue and the capsule of the organ, eventually between the acini themselves. Associated with these lesions are bacteria, especially streptococci. The method of the extension of the process bears a resemblance to the conditions found in erysipelas and has suggested the name erysipelatoid for this type of pancreatic lesion. However, the relation of the bacteria to the lesions is not always evident, and postmortem multiplication, possibly postmortem invasion, may have taken place. So this can not be said to be a clear case of pancreatitis of bacterial etiology.

The interest of the case lies in its short duration, the extent and character of the inflammatory lesion, the slight degree of necrosis of the pancreas and fat tissue and the absence of hemorrhagic lesion. Such a case strengthens the belief in the inflammatory nature of acute hemorrhagic pancreatitis. Seitz,[2] discussing the point as to whether severe pancreatic hemorrhages are inflammatory in origin, asks the question, "Warum sind keine Fälle vorhanden, bei denen es nicht zur Blutung gekommen ist, wo also eine reine Entzündung so plötzlich tödte?" Oser[3] was able to find only two cases, those of Cayley and Kennan, with which to answer this question. However, neither of these cases is convincing, as microscopic examinations were not made. Our case serves to answer the question asked by Seitz and shows

2. Blutung, Entzündung und brandloses Absterben der Bauchspeicheldrüse. Zeitch. f. klin. Med., xx, 1892, 214.
3. Nothnagel's Spec. Path. u. Therap., xviii.

the possibility of an inflammatory lesion of the pancreas without hemorrhage but clinically presenting the picture of acute hemorrhagic pancreatitis.

X-RAY THERAPY IN LEUKEMIA.

A PRELIMINARY REPORT. WITH SPECIAL REFERENCE TO LYMPHATIC LEUKEMIA.

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AND
JOSEPH F. SMITH, M.D.
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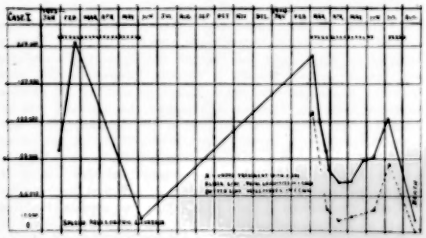
The first recorded utilization of the *x*-ray for the treatment of leukemia was by Pusey,[1] who observed no effect whatever in a case of the splenomyelogenic type, but in one of the lymphatic type he noticed a marked diminution in the size of the glands. More recently a fresh interest in the subject has been aroused by the favorable reports of Senn,[2] Brown[3] and others.[4]

In all we have seen reports of 11 cases of well-verified leukemia treated in this way. All but one of these belonged to the splenomyelogenic type. In every instance the splenic tumor decreased in size, in 3 cases becoming barely palpable. The leucocytes in all cases excepting Pusey's diminished in number. Four reporters record a white count under 10,000, with entire disappearance of



the myelocytes. An improvement in the hemoglobin and red corpuscles always took place, but was frequently followed by a decline. Death occurred in 3 cases; one will soon result fatally. The others were all much improved at the time of their publication. It should be emphasized, however, that none had been observed under treatment for more than eight months.

Through the courtesy of Dr. Senn we are enabled to report the further course and termination of his published case of splenomyelogenic leukemia and one other hitherto unpublished. We are also indebted to Drs. Bevan and Herrick for the privilege of using patients in their service at the Presbyterian Hospital. In the accompanying table are condensed the salient features of eight cases that have come under our observation. The typical blood changes are graphically illustrated by two charts; one of splenomyelogenic, the other of lymphatic leukemia.

Case 1 shows the inhibiting influence of the *x*-ray on the leucocytes and the constant tendency for the leucocytes to multiply when the treatment is discontinued. The count toward the last fell to the normal, but the myelocytes never entirely disappeared.

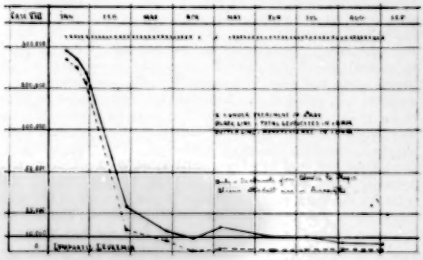
LYMPHATIC LEUKEMIA.

The only well-reported case observed during treatment is the one by Pusey above referred to. The glands and spleen in his patient twice went down to nearly normal size under the treatment, but recurrence and finally death took place. He found no marked fall in the leucocytes.

In our series of 6 lymphatic cases, death resulted in 4, and it will be noticed that 3 of these ran an acute or subacute course; the fourth showed a great shrinkage of the gland tumors and an improvement in the blood before death took place. The remaining 2 cases exhibit a steady continuous improvement in the blood, glands and spleen. The blood chart of Case 6 is typical of both; not only does the leucocyte count become normal, but the differential count gives no hint of the blood disease. The spleen and glands in both patients remain somewhat enlarged.

SOME GENERAL DEDUCTIONS.

1. The action of the *x*-ray in leukemia seems to be of two kinds: (a) A local influence on the spleen and



glands, characterized by an inflammatory reaction and later by a breaking down and disintegration of the gland tissue. (b) The formation of toxins which have an inhibitory action on the manufacture of leucocytes by the bone marrow. It is well known that acute infections occurring in leukemia, such as pneumonia, septicemia or terminal infections, tend to inhibit the production of white corpuscles and often cause a reduction in the size of the spleen or gland tumors. The *x*-ray toxins may be compared to those produced by such infections.

2. In no recorded instance of either lymphatic or splenomyelogenic leukemia has the spleen tumor entirely disappeared.

3. With the discontinuance of the *x*-ray, the disease, after varying periods, tends to reassert itself.

4. Death may take place when the glands and spleen are smallest, and when the white count is normal.

5. Acute cases seem to receive no benefit from the *x*-ray.

6. The chronic form of lymphatic leukemia responds to the *x*-ray even more promptly than the splenomyelogenic type. In every instance the glands rapidly softened and dwindled to small proportions.

7. The *x*-ray holds the disease process in abeyance, but probably is not curative. Yet it is too soon to say that persistent treatment of an early case may not give permanent relief.

1. Pusey: THE JOURNAL A. M. A., April 12, 1902, and Text book on Roentgen Rays in Therapeutics and Diagnosis, 1903.
2. Senn: N. Y. Med. Jour., April 12, 1903.
3. Brown: THE JOURNAL A. M. A., March 26, 1904.
4. Other references are: Bryant and Crane, N. Y. Med. Record, April 9, 1904; Weber, Am. Medicine, May 21, 1904; Guilloy and Spillman, Sem. Médicale, June 1, 1904; Grosh and Stone, THE JOURNAL A. M. A., July 2, 1904; Ahrens, Münch. med. Woch., July, 1904, No. 24; Dunn, Am. Pract. and News, July 15, 1904; Chester, Chicago Med. Recorder, August, 1904.

Special Article.

TRAVEL NOTES.—X.*

A WINTER SEMESTER.

LEWELLYS F. BARKER, M.D.

CHICAGO.

(*Concluded from page 813.*)

MUNICH, July 21, 1904.

The unusual attractiveness of Munich as a place of residence is, perhaps, not an unmixed advantage to the medical school, for though it insures a large attendance and affords unusual opportunities to the students for self-development in general culture, for the enjoyment of art, music and the theater, it brings to the University of Munich more than its share of the lazy, loitering students who care more for the *Burschlichen*, for which the interesting old city gives such ample opportunity, than for the training of their hands or the perfecting of their minds. In the spring and autumn the adjacent mountains seduce to frequent excursions. In the winter the *Bal paré*, the *Redoute* and the delights of carnival lead to the squandering of all too many hours that should be devoted to study. At all times the restaurant life and café life is there with its peculiar inducements to the sacrifice of time.

Two especial attractions appealed not only to the students of Munich during the past winter, but to all residents and visitors. Both were novel forms of the dance—one the artistic, music interpreting dance of the American, Miss Isadora Duncan, the other the so-called sleep dance or dream dance of the hypnotized, hysterical Mme. Madeleine[1] of Paris. The latter was the more pathologic in its interest. For a time it seemed as if all Munich from the uppermost to the lowest class had been hypnotized by her; everyone you met spoke of her, asked if you had seen her, and wanted to know if she were really hypnotized or if it were all a swindle. She was "discovered" in Paris by a "magnetisator," a quack whom she had consulted regarding headaches. The "magnetisator" hypnotized her, and by chance, he says, while she was in the hypnotic state, played a selection from Chopin. To his surprise, so the story goes, the patient began to react in the most marvelously plastic way to the musical sounds. The artistic attitudes assumed were so remarkable that she was presented in several art studios in Paris and London; the cataleptic attitudes called forth by various suggestions could be maintained long enough for photographic reproduction, and a large series of pictures of her, illustrating "all phases of human emotion unencumbered by any inhibitory influence" are on sale and used as models by artists. The "magnetopath" being a practical business man, decided to exploit her. He could have chosen no better place than Munich in which to begin operations. That city, probably, has the most mobile nervous system in Europe; the phenomenal success of "the Duncan" there, as compared with her relatively cool reception in hard-headed Berlin, had sufficiently demonstrated that. But how to effect an entrance was the difficulty. Hypnotic exhibitions in public are prohibited by law in Germany. The public had to be smuggled in in some way under the protection of science. The gulf between the "magnetisator" and the medical profession was finally bridged through the intermediation of the Munich Psychological Society and of von Schrenck-Nötzing, a nerve specialist, whose offer to present "the Madeleine" as a clinical case to the *Aerztliche Verein* was accepted. Some 400 physicians met in the amphitheater of the Medical-Clinical Institute. The clinical history was read by v. Schrenck-Nötzing. The woman, 30 years old, had been a nervous child though actual hysterical attacks had never been noted. Examination revealed a moderate degree of anemia, left-sided hyperalgesia, hysterical visual fields, and in general the psychic stigmata of the hysterical nature. The Parisian impresario was then called in and he, with much Svengali-like nonsense—one could feel the medical men in the audience shiver—put the patient to sleep. Loewenfeld, von Schrenck-Nötzing and other experienced hypnotists examined her and declared that there was no doubt as to the hypnotic condition. Professor Thiele, at the piano, tested the reactions of the woman to intensity of tones, velocity of tone sequence, rhythm, height of tone, scale, intervals, legato, staccato, consonance, dissonance and the like. The reactions were lightning-like and consistent; the movements of the body produced were undoubtedly marvelous; the contrast between the reaction to waltz music and a funeral march were extreme. Under the verbal suggestion of the magnetopath, further, she reacted immediately in correspondence to the most diverse human feelings and emotions.

After "waking her" with voice and various absurd movements, the "magnetisator" and his charge withdrew and the discussion was opened. Though the chairman of the meeting urged that the discussion should not be made public, this was, in the state of tension which existed in Munich at the time, too much to hope for. The opinions expressed at the meeting soon became public property and a résumé of the proceedings was even written by a physician for the feuilleton of the *Frankfurter Zeitung*. The most diverse opinions were expressed, and they were not limited to the character of the case presented, but involved, as might have been expected, the medical ethics of the whole situation. Loewenfeld's opinion seemed to be listened to with the greatest respect. Though some of the physicians had thought the hypnotism simulated and the whole performance a swindle, Loewenfeld felt sure that the hypnotism was genuine, but gave it as his opinion that the hysterical element rather than the hypnosis was responsible for the artistic attitudes, the hypnosis, perhaps, being helpful, since in the hypnotic condition all inhibitory influences are removed, and capacities, which, possessed in the waking condition, but then improperly unfolded owing to shyness, embarrassment and distraction, can first be fully exhibited. The woman, it was asserted, had no especial training in art and music, but that she, through inheritance, must be very susceptible to music is obvious, a fact which may be accounted for, some thought, through the history that her mother had been a dancer in Tiflis. That no physician has hypnotized Mme. Madeleine is a feature of the situation to which attention was more than once called.

From all I could see, and trying to weigh as critically as I could the conflicting comments made, I came away from the meeting feeling that Mme. Madeleine's performance was qualitatively a mixture of hypnosis, hysteria and hocus pocus, but as to the quantitative relations of the three ingredients I shall venture no guess.

The fact that public exhibitions of hypnotism are illegal, of course, made the great public most anxious to see Mme. Madeleine. The reports of the presentations at the Psychological Society and at the Medical Society whetted the appetite further. The way in which the law was evaded was interesting. People who desired to see the woman registered their names at one of the Munich bookstores. Invitations to attend a "private performance" in the Schauspeielhaus were then sent out by the Psychological Society; acceptances were to be accompanied by a subscription of 10 or 20 marks, according to the position of the seats. These difficulties helped, as I have said, to hypnotize the public. The house was sold out, and audiences of musicians, artists, actors and the wholesale public viewed the "dream dance" unmolested. How great the harm done to the people at large has been it is difficult to calculate. Rumor has it that the offices of the hypnotists are being more than ever visited by women and girls, who demand that they be hypnotized in order that their slumbering or inhibited talents may be revealed.

*The previous articles in this series have been as follows: "Travel as a Means of Post-Graduate Medical Education," by Dr. Nicholas Senn, July 23; "Is a Trip to Europe Worth Its Cost to the Medical Man?" by Dr. Lewellys F. Barker, July 30; "Spain and Ramon y Cajal," by Dr. Barker, Aug. 6; "Leprosy in the Hawaiian Islands," by Dr. Senn, Aug. 13; "Italy and the Great Antimalarial Campaign," by Dr. Barker, Aug. 20 and 27; "Father Damien, the Leper Hero," by Dr. Senn, Aug. 27; "A Winter Semester," by Dr. Barker, Sept. 3 and 17; "Medical Conditions in the Hawaiian Islands," by Dr. Senn, Sept. 10.

1. THE JOURNAL, May 14, 1904, page 1327, gave an abstract of an article on this dancer by a prominent scientist.—ED.

New Instrument.

SALINE INFUSION AND IRRIGATING FLASK.

JOHN J. SHEA, M.D.
BEVERLY, MASS.

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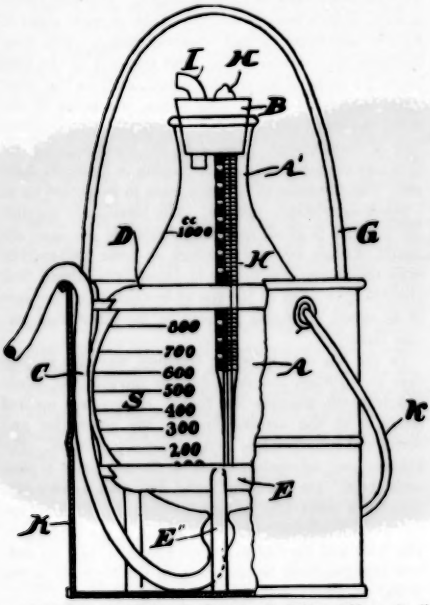

Fig. 1.—A, A'. Flask. B. Stopper. C. Rubber tubing. D, E. Metal rings. E''. Nipple. G. Ball or handle of flask. H. Thermometer. I. Inlet for air. K. Coppered tin with handle.

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The stopper is made of rubber, containing two perforations, one containing a thermometer for registering temperature of solution and the other a small glass tube, to allow air to enter to compensate the displaced liquid.

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In upper part of this box is a compartment in which to carry sterile needle and a concentrated sterile salt solution, an ounce of which added to 1,000 c.c. of water makes a normal salt solution. This solution can be prepared and kept in the flask for emergencies, showing its helpfulness in ambulance calls, railway accidents, etc., beside its convenience to the physician and the hospital.

Clinical Report.

REPORT OF A SYMPTOMATIC CURE OF CONVULSIVE TIC DOULOUREUX BY INJECTION OF OSMIC ACID.

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History.—Mrs. H., aged 71 years, came to me on July 5, 1904. The case was one of typical intense tic douloureux involving the right side of the face. The first paroxysm occurred about twenty years ago, subsequent attacks gradually becoming more frequent and more severe. Practically all of the many remedies recommended for the relief of this condition had been tried without benefit. All the teeth had been extracted in the belief that perhaps dental caries bore some causative relation to the pain. For almost three months prior to the operation the pain had been excruciating, the attacks occurring with exhausting frequency. The whole right side of the face was exquisitely tender, particularly in the neighborhood of the infraorbital and mental foramina. The tongue was sore and tender at all times, this greatly interfering with speech. During attacks the pain was most acute about the right angle of the mouth and the angle of the right jaw. Violent spasm of the buccinator was almost constantly present during the attacks.

Treatment.—A 2 per cent. solution of osmic acid was injected into the supraorbital, infraorbital and inferior dental nerves at the supraorbital notch and infraorbital and mental foramina. The manner of operating was precisely that practiced by Dr. John B. Murphy and described by him at the Atlantic City meeting of this year. Ten drops of a 2 per cent. solution of the osmic acid were injected into each branch, and two or three drops were forced into the perineural fat of each foramen around the nerve. At the time of the injection of the osmic acid the nerves were drawn with very slight force from the foramina and held during the injection, but the trunks were not stretched as in the operation of neurectasy.

Result.—Up to the present time there has been no return of the pain since its abatement one week after the operation. During the first week several rather severe paroxysms occurred, these gradually decreasing in severity. It is possible that the pain in this case may return, but even if it should, the respite for a few months justifies an operation so easy of performance and attended with so little danger.

An interesting feature of the case was the severe nephritis occasioned by the elimination of the acid. The urine passed during the first twelve hours succeeding the operation showed nothing unusual; however, on the second day nephritis resulted. There were no symptoms either subjective or objective pointing to its onset or presence excepting the appearance of and findings in the urine. The patient did not complain of pain in the loins. Urine passed thirty-six hours after the operation showed the following:

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Special Article.

TRAVEL NOTES.—X.*

A WINTER SEMESTER.

LEWELLYS F. BARKER, M.D.

CHICAGO.

(*Concluded from page 813.*)

MUNICH, July 21, 1904.

The unusual attractiveness of Munich as a place of residence is, perhaps, not an unmixed advantage to the medical school, for though it insures a large attendance and affords unusual opportunities to the students for self-development in general culture, for the enjoyment of art, music and the theater, it brings to the University of Munich more than its share of the lazy, loitering students who care more for the *Burschelben*, for which the interesting old city gives such ample opportunity, than for the training of their hands or the perfecting of their minds. In the spring and autumn the adjacent mountains seduce to frequent excursions. In the winter the *Bal paré*, the *Redoute* and the delights of carnival lead to the squandering of all too many hours that should be devoted to study. At all times the restaurant life and café life is there with its peculiar inducements to the sacrifice of time.

Two especial attractions appealed not only to the students of Munich during the past winter, but to all residents and visitors. Both were novel forms of the dance—one the artistic, music interpreting dance of the American, Miss Isadora Duncan, the other the so-called sleep dance or dream dance of the hypnotized, hysterical Mme. Madeleine[1] of Paris. The latter was the more pathologic in its interest. For a time it seemed as if all Munich from the uppermost to the lowest class had been hypnotized by her; everyone you met spoke of her, asked if you had seen her, and wanted to know if she were really hypnotized or if it were all a swindle. She was "discovered" in Paris by a "magnetisator," a quack whom she had consulted regarding headaches. The "magnetisator" hypnotized her, and by chance, he says, while she was in the hypnotic state, played a selection from Chopin. To his surprise, so the story goes, the patient began to react in the most marvelously plastic way to the musical sounds. The artistic attitudes assumed were so remarkable that she was presented in several art studios in Paris and London; the cataleptic attitudes called forth by various suggestions could be maintained long enough for photographic reproduction, and a large series of pictures of her, illustrating "all phases of human emotion unencumbered by any inhibitory influence" are on sale and used as models by artists. The "magnetopath" being a practical business man, decided to exploit her. He could have chosen no better place than Munich in which to begin operations. That city, probably, has the most mobile nervous system in Europe; the phenomenal success of "the Duncan" there, as compared with her relatively cool reception in hard-headed Berlin, had sufficiently demonstrated that. But how to effect an entrance was the difficulty. Hypnotic exhibitions in public are prohibited by law in Germany. The public had to be smuggled in in some way under the protection of science. The gulf between the "magnetisator" and the medical profession was finally bridged through the intermediation of the Munich Psychological Society and of von Schrenck-Nötzing, a nerve specialist, whose offer to present "the Madeleine" as a clinical case to the *Aerztliche Verein* was accepted. Some 400 physicians met in the amphitheater of the Medical-Clinical Institute. The clinical history was read by v. Schrenck-Nötzing. The woman, 30 years old, had been a nervous child though actual hysterical attacks had never been noted. Examination revealed a moderate degree of anemia, left-sided hyperalgesia, hysterical visual fields, and in general the psychic stigmata of the hysterical nature. The Parisian impresario was then called in and he, with much Svengali-like nonsense—one could feel the medical men in the audience shiver—put the patient to sleep. Loewenfeld, von Schrenck-Nötzing and other experienced hypnotists examined her and declared that there was no doubt as to the hypnotic condition. Professor Thiele at the piano, tested the reactions of the woman to intensity of tones, velocity of tone sequence, rhythm, height of tone, scale, intervals, legato, staccato, consonance, dissonance and the like. The reactions were lightning-like and consistent; the movements of the body produced were undoubtedly marvelous; the contrast between the reaction to waltz music and a funeral march were extreme. Under the verbal suggestion of the magnetopath, further, she reacted immediately in correspondence to the most diverse human feelings and emotions.

After "waking her" with voice and various absurd movements, the "magnetisator" and his charge withdrew and the discussion was opened. Though the chairman of the meeting urged that the discussion should not be made public, this was, in the state of tension which existed in Munich at the time, too much to hope for. The opinions expressed at the meeting soon became public property and a résumé of the proceedings was even written by a physician for the feuilleton of the *Frankfurter Zeitung*. The most diverse opinions were expressed, and they were not limited to the character of the case presented, but involved, as might have been expected, the medical ethics of the whole situation. Loewenfeld's opinion seemed to be listened to with the greatest respect. Though some of the physicians had thought the hypnotism simulated and the whole performance a swindle, Loewenfeld felt sure that the hypnotism was genuine, but gave it as his opinion that the hysterical element rather than the hypnosis was responsible for the artistic attitudes, the hypnosis, perhaps, being helpful, since in the hypnotic condition all inhibitory influences are removed, and capacities, which, possessed in the waking condition, but then improperly unfolded owing to shyness, embarrassment and distraction, can first be fully exhibited. The woman, it was asserted, had no especial training in art and music, but that she, through inheritance, must be very susceptible to music is obvious, a fact which may be accounted for, some thought, through the history that her mother had been a dancer in Tiflis. That no physician has hypnotized Mme. Madeleine is a feature of the situation to which attention was more than once called.

From all I could see, and trying to weigh as critically as I could the conflicting comments made, I came away from the meeting feeling that Mme. Madeleine's performance was qualitatively a mixture of hypnosis, hysteria and hocus pocus, but as to the quantitative relations of the three ingredients I shall venture no guess.

The fact that public exhibitions of hypnotism are illegal, of course, made the great public most anxious to see Mme Madeleine. The reports of the presentations at the Psychological Society and at the Medical Society whetted the appetite further. The way in which the law was evaded was interesting. People who desired to see the woman registered their names at one of the Munich bookstores. Invitations to attend a "private performance" in the Schauspielhaus were then sent out by the Psychological Society; acceptances were to be accompanied by a subscription of 10 or 20 marks, according to the position of the seats. These difficulties helped, as I have said, to hypnotize the public. The house was sold out, and audiences of musicians, artists, actors and the wholesale public viewed the "dream dance" unmolested. How great the harm done to the people at large has been it is difficult to calculate. Rumor has it that the offices of the hypnotists are being more than ever visited by women and girls, who demand that they be hypnotized in order that their slumbering or inhibited talents may be revealed.

*The previous articles in this series have been as follows: "Travel as a Means of Post-Graduate Medical Education," by Dr. Nicholas Senn, July 23; "Is a Trip to Europe Worth Its Cost to the Medical Man?" by Dr. Lewellys F. Barker, July 30; "Spain and Ramon y Cajal," by Dr. Barker, Aug. 6; "Leprosy in the Hawaiian Islands," by Dr. Senn, Aug. 13; "Italy and the Great Antimalarial Campaign," by Dr. Barker, Aug. 20 and 27; "Father Damien, the Lesser Hero," by Dr. Senn, Aug. 27; "A Winter Semester," by Dr. Barker, Sept. 3 and 17; "Medical Conditions in the Hawaiian Islands," by Dr. Senn, Sept. 10.

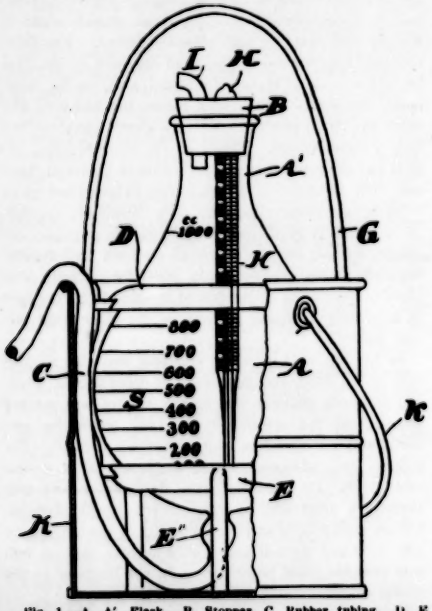
1. THE JOURNAL, May 14, 1904, page 1327, gave an abstract of an article on this dancer by a prominent scientist.—ED.

New Instrument.

SALINE INFUSION AND IRRIGATING FLASK.

JOHN J. SHEA, M.D.
BEVERLY, MASS.

This apparatus relates to an improvement in saline infusion and irrigating flasks. As illustration shows, it consists of a chemical glass reservoir, suitably marked in cubic centimeters up to one liter. It is provided at its base with a nipple-shaped outlet, to which rubber tube and needle are attached. This glass reservoir is held in place by upper and lower metal rings, between which and flask is interposed rubber packing to prevent flask from cracking. These rings are detachably connected, by means of metal rods going through perforated ears in the rings. The upper end of each rod is provided with an



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SATURDAY, SEPTEMBER 24, 1904.

PROGERIA, A FORM OF SENILISM.

Among the still obscure physiologic problems must be reckoned those relating to the mechanism regulating growth and decay. While we are in possession of isolated scraps of knowledge which shed an occasional glimmer of light on the subject, our knowledge can only be described as fragmentary. The studies of the last few years on acromegaly and giantism indicate that the pituitary body has some influence on development, though just what this influence is remains obscure. In some cases of dwarfism, too, this gland has been found diseased. In some forms of dwarfism again the thyroid seems to play a part, as is the case in cretinism and allied conditions. Then, again, certain glands seem to bear a relation to certain systems rather than to the body as a whole, an example of this being the curious relation which exists between excessive or premature development of the genitalia and some of the diseases of the adrenal glands. The question as to the factors which delay or accelerate decay, though less frequently studied, is equally as important as that relating to growth. Why is it that in individuals of the same age some are so much older and some so much younger, so far as their tissues and intellect are concerned, than the average individual of that age? Why is it that in the same individual one organ, or group of organs, may be older or younger than the rest of the body structures? To use the term originated by Sir James Paget, what is it that regulates the "chronometry of life"?

In a recent article, Hastings Guilford[1] has reported, under the name of progeria, some extremely interesting cases in which there existed a combination of premature senility and infantilism, but in which the former condition greatly predominated. In all the cases the predominating syndrome of premature decay was far beyond the limits of possible normal variation, and was unassociated with any previous disease which might have acted as a causative factor. Without considering the cases in detail, it will be of interest to briefly sketch salient points in the natural history of the two most characteristic cases, these being so similar that one description will suffice. The disease begins in early infancy, with loss of hair so marked that at six months more than half the hair may have disappeared. At the same time the child begins to emaciate. The shoulders are rounded and the chest narrow on account of the lack of development of the clavicles. The head is relatively large, and may resemble the head of hydrocephalus. As the child grows the hair becomes more scanty and turns gray so that as early as the age of seven only a very scanty gray crop may remain. The growth is stunted and the child takes on all the appearances of the decrepitude of age. The skin becomes loose and shriveled, the arteries show senile changes, and the whole appearance and even the mental attitude is that of the adult rather than that of the child. The children are easily fatigued, partly on account of muscular weakness, partly on account of shortness of breath, the latter symptom being of cardiac origin. Physical examination shows a curious mixture of the physical signs of senility and those of lack of development. The skin, the hair, the vascular system, and the ends of the long bones are those of an old individual, and, on the other hand, the shafts of the long bones, the bones of the skull, the teeth, and the mammary glands show marked lack of development. The liver, the blood-forming organs and the genitalia seem to develop in a normal manner. The functions of the body seem to be carried on in a fairly satisfactory manner. The bowels are regular, the appetite is good, and most foods are normally digested, though curiously enough in both well-marked cases the patient was unable to digest fats. Death took place in both cases at the age of seventeen; in one case in an attack of angina pectoris, in the other from cardiac failure.

In the one case in which Guilford was able to procure an autopsy, the same curious mingling of senile and infantile changes was found. There was marked sclerosis of the arterial system, the coronaries and aortic and mitral valves being especially affected. The kidneys and adrenals showed a fibrosis of a typical senile type. On the other hand, he noted a persistent thymus, a great lack of development of the clavicles, and an undeveloped state of the shafts of the long bones. The liver and thyroid gland were normal, and no definite changes could be made out in the brain or in the pineal or pituitary glands.

In his discussion of the pathogenesis of the disease, the author sums up the condition as being one of "retarded development, combined with premature old age and with indications of some attempt to attain a normal condition." He is unable to explain the causative factors in the disease. There was no evidence that it was due to previous disease of some particular organ, the thyroid, pituitary and brain being normal, and the author evidently does not think the adrenal changes of importance enough to lead to serious results. He compares the cases to the form of infantilism known as ateliosis, and thinks that possibly these may be cases of ateliosis combined with premature senile decay. He neglects to state the condition of the pancreas in the case examined postmortem, and apparently regards this of no moment. In the light of the cases of pancreatic

1. The Practitioner, August, 1904; and also report of Brit. Med. Assn., THE JOURNAL, Sept. 3, 1904, p. 691.

infantilism, recently reported by Bramwell and others, it would have been of interest to have known the condition of this organ in his cases, particularly as in both of them there was a marked aversion to fatty food, and in one there were also periodic attacks of abdominal pain.

AID WANTED FOR CONVALESCENT INSANE.

It is well known that the average patient discharged from the hospital for the insane, as recovered or improved, is in a most helpless and pitiable situation if he has no friends to look after him, and there are many such. In his efforts to obtain employment he is more heavily handicapped than is the discharged prisoner. At the very moment, therefore, when he should be protected, well nourished and cheerfully employed, he is plunged into difficulties and discouragements, and frequently is reduced to abject want. It is not strange that he too often again succumbs to his malady; neither is it to be wondered at that, in view of this well-recognized danger, convalescent patients are sometimes retained in the asylums by humane superintendents too long for the good of the asylums and too long for their own good, could they be sent out into the world under even a temporary guarantee of safe and wholesome living conditions. In this country there are many societies for the aid and encouragement of discharged convicts, but none, so far as we are aware, which provides assistance for the recovered patient discharged from a hospital for the insane. The general charitable societies, of course, do much to relieve the families who are reduced to helplessness by the insanity of their breadwinners, and in some cases patients are assisted in obtaining work on their return. All this, however, quite fails to meet the situation.

Special organizations are necessary, which should, in fact, perform the function of lay auxiliaries to the asylums. Such societies should have a temporary home, where a patient without family or friends could go immediately on leaving the asylum, so that he would find himself at once in an atmosphere of friendly encouragement. He should be aided to find work, and to regain the habit of independence which is too often permanently lost in the asylum. If the patient had been an alcoholic, great pains might be necessary to prevent a return to his former associations and a relapse into his former indulgence. The functions of such a society, however, must go still further. It should concern itself with such matters as the humane care of patients during the period when they are in custody awaiting inquiry as to their mental state; it should combat the popular ignorance and dread of the asylum, and above all, should aid in popularizing the knowledge that acute and transitory cases should have immediate care under surroundings so closely approximating those of the general hospital that the old asylum stigma would be lost. Such societies should have the right of entry to public institutions, as have the valuable State Charities Aid Societies of New York and New Jersey. They would undoubtedly succeed in greatly improving the condition of the insane under county care in the various states.

The creation of societies for the aid of discharged patients would have many foreign precedents. In Germany, for instance, there are fifteen volunteer societies organized for the aid of the insane, the first of which was begun in 1842. In general terms, their purpose is: "To give moral and material assistance to indigent, discharged patients in order to facilitate their return into society and to prevent a recurrence of their malady." "To improve the public care of the insane, and to combat the popular prejudice against the insane and against asylums." In the organization of these German societies the initiative has been taken by medical men, and usually by the physicians in charge of the regional asylums. Physicians are members, and aid in directing the work, though the majority of the members are, of course, non-professional. Persons can become members on annual payment of a small fee, or by lending their personal aid in caring for individual cases. The reports show that considerable sums of money are disbursed, and indicate that the societies have large memberships and perform a most useful work.

There are similar societies in other continental countries. In Paris there are at least two *Sociétés de Patronage des Aliénés*. There is no doubt that such organizations would prove even more useful in America than abroad, and, if once started under wise auspices, there can be no question of their successful appeal to public sympathy.

NATURAL AND ARTIFICIAL ANTHRAX IMMUNITY.

The study of immunity and susceptibility to disease, by test-tube experiments, has brought to light a number of seemingly paradoxical results. It has been shown, for instance, that human blood serum is strongly bactericidal *in vitro* for typhoid and dysentery bacilli, and that it may retain this property, although sometimes in a less degree, during the course of these diseases. Chickens and swine are practically immune to anthrax infection, and yet it is found that the blood and the blood serum of these animals form good culture media for anthrax bacilli. Dogs also are relatively immune, and their blood likewise is a good nutritive medium for this form of micro-organism. Rabbits, on the other hand, are very susceptible to anthrax infection, while their extravascular blood serum almost instantly kills large numbers of the bacilli. Cattle and sheep are susceptible to anthrax, and their blood serum also forms good culture medium, but it has been shown that this serum contains a large amount of amboceptor which, with a suitable complement, may take part in the destruction of the bacilli. These experiments, therefore, do not give us the slightest hint as to why

one animal is susceptible to a certain infection and another is immune to it. They show that the results obtained by test-tube experimentation do not necessarily give us any information regarding that which takes place in the animal body.

It has often been the aim of investigators to make the test-tube experiments as simple as possible. This simplicity is doubtless a desirable thing, but necessarily produces a set of conditions entirely different from that encountered in the animal body, and the results thus obtained must accordingly be of little value in giving us an insight into the processes going on in the animal organism. Recognizing this fact, Bail and Petterson[1] have made a series of experiments in which they attempted to approximate the conditions that are found in the body, and the results thus obtained are entirely different from those obtained by the simpler experiments. They have shown that rabbit serum which is anthracidal *in vitro* is deprived of that property by the addition of only a small quantity of an emulsion of organ cells, such as liver, spleen, bone-marrow, etc. This seems to be due to the fact that the organ cells have a greater affinity for the amboceptors of the serum than have the anthrax bacilli, thus taking them away from the latter. In the small capillaries of the living organs the amboceptors may likewise be bound to the organ cells, and thus be prevented from taking part in the destruction of the bacilli that have reached the organs. This seems to be a satisfactory explanation of the susceptibility of rabbits to anthrax infection, in spite of the fact that their extravascular blood serum is strongly anthracidal. Chickens are practically immune, although their extravascular blood serum possesses no anthracidal powers. It does, however, contain amboceptors, as is shown by the fact that it can be made active by a very small quantity of rabbit serum. If, now, normal chicken serum is mixed with bone-marrow or with leucocytes, it at once becomes anthracidal. Beef, goat and swine serums also may be made active by the addition of chicken's bone-marrow. Bail and Petterson conclude from this observation that the bone-marrow and leucocytes of the chicken contain a complement which, acting conjointly with the amboceptors in the serum, destroys anthrax bacilli, and thus protects chickens against infection. Dog serum with leucocytes or bone-marrow also has anthracidal powers, thus explaining the relative immunity of dogs. The leucocytes and bone-marrow seem to be capable of giving off small quantities of complement to the serum, as is shown by the fact that the serum is slightly anthracidal when obtained twenty-four hours after the intravenous injection of a large dose of anthrax bacilli; also by the fact that the cell-free exudate obtained from the pleura of a rabbit dead from an intrapleural injection of anthrax is capable of activating dog, sheep or hog serums. None of these serums is anthracidal, nor is the cell-free exudate when used alone.

1. Centralblatt f. Bakt., 1903-04, vols. xxxiv-xxxvi.

Bail and Petterson immunized young dogs and chickens by repeated injections of anthrax bacilli until these animals could stand about ten times the ordinary fatal dose. (Young dogs are more susceptible to anthrax infection than older ones.) They then studied the organs and body fluids of these animals to determine the change produced in them during the process of immunization. The blood serum, in no instance, had acquired anthracidal powers, but it was found that the defibrinated blood was capable of destroying the bacilli. This anthracidal power of the blood was shown to be proportional to the number of leucocytes contained in it, and these were greatly increased by the injection of anthrax bacilli. The mixture of serum and bone-marrow had acquired a much higher anthracidal power than a similar mixture from a normal dog of the same age. The investigators could not detect an increase of amboceptors in the serum, but believe that there was an increase in complement, because there was a marked increase in the leucocytes, and these they believe contain the complement. These experiments show very nicely the great complexity of the phenomena of infection and immunity, and also emphasize again the important part played by the leucocytes in protecting the body against bacterial invasion.

EUTHANASIA FOR THE DEFECTIVE AND INCURABLE.

Every little while some enthusiastic or notoriety-seeking writer bobs up advocating the curtailing of human existence in hopeless and incurable cases. The idea of the sacredness of human life is hardly sufficiently installed in such people's intellect, hence these lucubrations. Moreover, it is apparently a belief of many of the laity that physicians do assist hopeless cases out of the world. Not long since a writer in a daily paper, speaking as an ex-mayor of a large city, told of a case of this kind, admitted by the physician and claimed to be justifiable, which he was forced to investigate. He says he consulted the best physicians in the city, and that they justified the act. We doubt this statement throughout. We do not believe that any number of physicians in any city would express such an opinion. It is directly contrary to the spirit of the profession, and it is certainly unfortunate that one writing as a municipal reformer should be willing to publish such a statement.

Now comes the announcement that a French professor is advocating premature euthanasia for incurables and the establishment of death rooms in hospitals where hopeless patients, at their own volition, may be painlessly sent out of the world. Such publications are dangerous as tending to diminish the respect for human life which should prevail in any civilized community, as directly encouraging homicide, and as vicious in tendency as any other incitation to murder.

We may excuse the person who commits suicide to avoid inevitable torture or dishonor, but we can not

justify in any way the physician who deliberately cuts short his patient's existence under any conditions whatever. It is his business to prolong, not to curtail human life, and under no circumstances whatever can he alter this rule. For professional reasons, altogether apart from those of public policy which would also prohibit such taking of human life under any circumstances, a physician should be the last of all men to advocate or excuse it. Death rooms in hospitals for the purpose proposed would be about as respectable as suicide clubs.

PATENT MEDICINES CONTAINING ALCOHOL BARRED IN SOUTH CAROLINA.

According to the South Carolina newspapers, they are taking effective action regarding certain "patent medicines" that it might be well for other states to follow. Probably it is because South Carolina, through its dispensary law, controls the sale of alcoholic liquors that it is able to do what it seems to be doing. One paper speaks of drug stores being prohibited from selling peruna on account of the alcohol it contains, and that hereafter it can be had only on the prescription of a physician Another shows that it is not only peruna that is barred, but Hostetter's bitters, De Witt's stomach bitters, and some others less known because less advertised. According to the state chemist's analysis, Hostetter's bitters contains 41.3 per cent., De Witt's stomach bitters 37.6 per cent., and peruna 26 per cent. of alcohol, and consequently are to be classified as intoxicants.

CARBOLIC ACID AND ITS DANGER.

Carbolic acid has long been regarded as a harmless chemical and as such forms part of the domestic equipment of many homes. Its dangers, however, are coming to be appreciated. We have learned that even in dilute solution it may cause serious lesions and its lethal possibilities are recognized by an increasing number of would-be suicides. It is on account of this last named fact that the health authorities of New York City have, it is reported, made a regulation requiring the registration of all sales of carbolic acid of strength above a 5 per cent. solution. This is a measure which can be commended and should have been adopted before. It is to be hoped that the example will be followed in other communities. It is rather a curious fact that suicides often choose most repulsive and uncomfortable methods, and this may account for the preference in so many cases for carbolic acid, which can hardly be considered an agreeable method. Be this, however, as it may, the chances of accidents from the common domestic use of this poison are of themselves sufficient to justify restrictions of its sale.

NERVOUSNESS IN SCHOOL CHILDREN.

According to statistics, reported in the daily press, one in three of the school children of the city of Chicago is affected with some form of nervous disorder, showing itself usually in the form of sluggishness and mental depression, with melancholic tendencies or by some degree of choreic manifestations. The causes alleged are the strenuous city life, the impure atmosphere of dwellings, the bringing up of children in flat buildings with deficient facilities for exercise, light and ventilation, the constant noise, day and night, and late hours and lack of sufficient sleep and nutrition. Beside the danger of overdevotion to study, city children are subject to excitements and social temptations to which those in smaller communities are far less liable. The introduction of manual exercises in schools will prove remedial to some extent, but it seems from the list of alleged causes that some of them are almost irremediable. The urban tendencies of population at the present time are not favorable to the production of a robust race, and any sanitary measure that will counteract this tendency should be encouraged. It may be that a special city type of mankind will be evolved; we fear a more or less defective or degenerate one. In the meantime we will have to go on enlarging and multiplying our asylums for the defective and the insane, and recruit as heretofore the best blood from the country

COMMISSIONS ON PRESCRIPTIONS.

A Philadelphia chemical company is trying to corrupt those of our profession who may be corruptible by the old scheme—for it has been tried several times before without success—of offering commissions on prescriptions in the shape of shares of stock in the company. "A credit will be allowed, equal to 25 per cent of the wholesale price of the prescriptions prescribed, redeemable in stock of the company." The company in its booklet assures the reader that the concern "is strictly a co-operative pharmaceutical house, owned, controlled and operated in the interest of the profession. Ninety-five per cent. of the stockholders are medical men, and no stock will be sold or disposed of except to members of the medical profession and doctors of dental surgery." This certainly will reassure anyone who may have any doubts as to the ethical nature of the scheme. Positively no stock-exchange operators or other gamblers will be allowed to get within reach of this plum, whose stock is so valuable "that only a reasonably short time will elapse before the company will be able to pay dividends equal to the par value of the stock." Each physician is supplied with a book of blanks, wherein he is to enter, day by day, opposite the name of each preparation of the company, the amount he has that day prescribed. Once a month he is to send in this drummer's sheet and secure his rake-off. The prospectus does not say so, but we suppose that those who sell the most goods will be put on a regular salary basis and be considered regular drummers for the house. There is one sign of conscience about the managers of this scheme—they doubtless fear that some practitioners may prescribe the company's goods without proper discretion and increase their commissions without due regard for the welfare of the patients. The following statement appears, therefore, in conclusion: "You should make yourself acquainted with the formulas and uses of the preparations and prescribe them whenever you believe they will be as efficacious as those of any other manufacture."

THE BACTERIOLOGIC DIAGNOSIS OF DIPHTHERIA.

While the specificity of diphtheria and the diphtheria-bacillus is universally admitted, it is recognized that, on the one hand, membranous deposits may form in the air passages from other causes, while, on the other hand, the bacillus may be present in association with catarrhal manifestations alone or even without other evidences of diphtheria. Diphtheria-bacilli have been found also in the throats of persons suffering from other diseases, scarlet fever especially. In order to clear up some of the mooted points in connection with the presence and the pathogenicity of diphtheria-bacilli, Dr. B. Czerno-Schwarz[1] made a study of the nasal and pharyngeal secretion from the patients admitted to the department for contagious diseases at the Wladimir Children's Hospital of Moscow. Of 385 patients received into the division for cases of scarlet fever and measles, 45 (11.6 per cent) yielded, on first examination, a growth of diphtheria-bacilli, divided as follows: Eight of 207 cases of scarlet fever, 3.6 per cent.; 37 of 160 cases of measles, 21.92 per cent. Of the former patients, seven presented necrobiotic angina and one follicular angina, while of the latter only two presented symptoms of diphtheria. As a result of the observations made, the conclusion is reached that negative results from repeated examination for the presence of diphtheria-bacilli are of undoubted and absolute value. By this means it has been demonstrated that membranous angina, laryngitis and croup may be of non-diphtheric origin. The significance of positive results from bacteriologic examination is likewise undoubted when the clinical picture is that of diphtheria. When, however, there is a discrepancy between the clinical picture and the results of bacteriologic examination the diagnosis must be considered as doubtful.

FIBRINOUS BRONCHITIS.

Fibrinous bronchitis is a rare disorder, probably of diverse etiology. The diagnostic feature is the expectoration of casts of the bronchial tree, of varied shape and length, in conjunction with a sense of suffocation, cyanosis, shallow and frequent respirations, enfeebled respiratory murmur, and unaltered percussion-resonance unless the alveoli become occluded or atelectasis develops. The symptoms disappear temporarily with the expectoration of the coagula, to return on their reformation. There has been some difference of opinion as to whether the casts consist of fibrin or of mucus, the one substance being found in some instances and the other substance in other instances. From all of the evidence, however, it would appear as if both substances are often present, sometimes together, sometimes alone. Confirmation of this view is afforded by a communication recently made by Dr. Gustav Liebermeister,[2] who reports in detail a case of fibrinous bronchitis, and also gives the results of a study of the casts obtained from twelve other cases of similar kind. He found that the coagula expelled in a case of grave heart disease during the death agony differed only in their great thickness from the casts expelled in cases of true fibrinous bronchitis, although they agree chemically and histologically Idiopathic fibrinous bronchitis is to be strictly differentiated, with reference to both the etiology and the morphology of the coagula, from descending diphtheria and from diphtheria of the bronchial tubes without involvement of the larynx. The coagula of true fibrinous bronchitis are honeycombed in structure, more or less completely filling the lumen of the bronchial tubes and generally containing a moderate amount of air. Microscopically, the appearances presented are those of a reticular structure, consisting of fibrin and mucus, and having spaces containing few cells. Fibrin was demonstrable in the casts in all of the cases and mucus also in seven. In cases of descending diphtheria, structures analogous to the deposits on the tonsils and the larynx are formed in the bronchi. These consist of a dense, compact, finely fibrillated fibrinous network, containing enormous numbers of cells, and they appear as simple or dendritic cylindrical membranes that can be detached from the mucous membrane surface only with the loss of epithelium. Curschmann's spirals were found in only one case among thirteen. The presence of Charcot-Leyden crystals and of eosinophile cells in the casts could not be demonstrated in any case.

1. Archiv für Kinderheilkunde, vol. xxxix, Nos. 1-3, p. 113.
2. Deutsches Archiv für klin. Med., vol. lxxx, Nos. 5-6, p. 551.

THE SPECIFICITY OF THE BODY-CELL TOXINS.

The observation that the blood of one species of animal is toxic to members of another species is an old one, and the modern studies set on foot by the work of Bordet and others have greatly extended our conception of body-cell toxicity, and have shown that it is not confined to blood cells alone. It appears at first sight such a simple matter to inject a particular cell or organ from one species of animal into a member of another species, that this line of research has been extensively followed in the last year or two. Then the results achieved in some instances by this work have illuminated some of the dark regions of pathology, and further research has seemed likely to give good results. It has been pretty generally assumed by the workers along these lines that a cell specificity existed, i. e., that if an animal is injected with ciliated epithelium it will produce antibodies for ciliated epithelium only; but it seems probable that this presumed specificity has been greatly overestimated. This whole question of specificity has recently been investigated by Pearce.[1] As Pearce indirectly brings out, many of the previous investigators seem to have assumed that morphologically similar cells would give rise to similar antibodies. Pearce's work had for its object to demonstrate that the chemical composition of the cell and not its morphology is the factor determining its specificity of action. He likewise endeavored to show that many of the results supposedly due to the specific action of one cytotoxin are really due to other cytotoxins adventitiously elaborated as the result of improper methods of immunization. As a result of his observations, Pearce concludes that the cells of the various organs of the body, while differing in morphology and function, have certain receptor characteristics in common, and that one type of cell may, therefore, produce antibodies affecting several cell

1. Journal Med. Research, vol. xii, No. 1.

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groups of differing morphology, but with like receptor groups. He also concludes, from comparing results obtained with organs as ordinarily removed with those obtained with organs freed from blood, that many of the positive results described as specific are due, not to specific action of the particular cell or organ used, but rather to the blood introduced with them. It would seem, therefore, that not a little of the published work on cytotoxins is valueless on account of mistakes in technic, and that much of the valuable work has been misinterpreted. This means that a great deal of research must be done over again by the more careful methods suggested by this study.

Medical News.

ILLINOIS.

Personal.—Dr. Anna E. Blount, Oak Park, has returned after a year in Europe.——Dr. Pliny W. Blanchard is seriously ill at his home in Harvard.

Smallpox.—The smallpox situation at Belleville is causing grave anxiety, and the authorities are taking all possible precautions to limit the spread of the disease.——Dr. John J. Leahy, Lemont, who claimed $5,750 for services during a smallpox epidemic, was allowed $5,000 in full of all claims.

Copper as a Germicide.—The State Board of Health is conducting investigations to determine whether water with typhoid fever or cholera germs can be purified simply by being kept in copper containers for a few hours. The experiments are being made under the direction of Dr. John H. Long of the Northwestern University Medical School.

Chicago.

Smallpox.—During the week 5 cases were sent to the isolation hospital. Two unvaccinated children died at the hospital.

Thousands for Hospital.—At the annual benefit concert for the Samaritan Hospital, held September 16, $2,000 was realized for the institution.

College Lengthens Course.—The College of Physicians and Surgeons, the College of Medicine of the University of Illinois, has extended its course to nine months. The term opens September 27.

Pneumonia Deaths Increase.—The deaths from pneumonia for the week ended September 17, were 34, an increase of 15, or nearly 80 per cent. over the mortality of the previous week from this cause.

Deaths of the Week.—The total deaths for last week were 443, the same as for the previous week. The increase in pneumonia mortality was more than compensated by the decrease in deaths from the more directly controllable diseases, and notably from those of the intestinal tract, such as acute intestinal diseases and typhoid fever.

INDIANA.

Sanitarian Appointed.—Dr. T. Victor Keen has been appointed city sanitarian by the Indianapolis Board of Health. The board will equip a laboratory for the chemical and bacteriologic research work of Dr. Keen.

Takes Strychnin by Mistake.—Dr. H. M. Connelly, Shelbyville, who has been in ill health for a long time, recently took strychnin in mistake for other medicine. He became violently ill, but his life was saved by prompt medical care.

Pre-Medical Examinations.—On September 15 and 16 the State Board of Medical Registration held an examination at Indianapolis of applicants for admission to the medical colleges of the state whose preliminary education had been outside of the regularly accepted sources.

IOWA.

Hospital for Poor and Old.—A. W. Buell, Mount Pleasant, has donated a building and grounds of ten acres in that city as a home and hospital for the aged.

Physician Re-located.—Dr. Alonzo E. Rodgers, formerly of Stanhope, who was confined in the Tipton jail for several months on a charge of forgery, which at the trial was shown to have occurred through a misunderstanding, has been released and will practice at Homer.

Jury Trial for Inebriates.—On the completion of the new state hospital for dipsomaniacs at Knoxville, the authority to hear and pass on cases of dipsomania will be taken from judges, and in each such case a jury will decide whether or not the individual is a fit subject for commitment to the hospital.

New Rules for Diphtheria Quarantine.—The State Board of Health has promulgated the following rules regarding the quarantine limit after diphtheria:

Quarantine shall be released in those houses in which diphtheria has been diagnosed when synchronous cultures taken from the noses and throats of all infected persons quarantined show two consecutive negative examinations, providing the regulation of the board regarding disinfection and fumigation have first been complied with.

Those who have been quarantined with diphtheria patients may be released from quarantine when both nose and throat cultures on examination by a bacteriologist of the state board of health do not show the presence of diphtheria bacilli.

In districts where it is not possible or desired to use the laboratory findings as a means of regulating quarantine, those suffering from diphtheria shall be quarantined for a period of not less than four weeks for initial symptoms where antitoxin is used, and five weeks where antitoxin is not used.

LOUISIANA.

Generous Donation for Italian Hospital.—Capt. Salvatore Pizzati, New Orleans, has given $250,000 as the nucleus of a fund for the establishment of a hospital for Italians in New Orleans.

Medical Student Dies.—Emile Hussey, New Orleans, a medical student at Tulane University, died September 1, as a result of injuries to the spinal cord received while diving into shallow water at Bay St. Louis, in July last.

Health Board Matters.—The St. Bernard Board of Health assembled, September 6, and organized with Dr. Louis E. Fondrust as chairman and ex-officio health officer.——On September 6 Drs. J. A. Harper, J. F. Polk, and Phau R. Outlaw were elected members of the Slidell Board of Health.

MARYLAND.

Faculty Honors Osler.—The Medical and Chirurgical Faculty of Maryland, at its semi-annual meeting in Ocean City, September 9, authorized the president to appoint a committee to take marked action in regard to the departure from the state of Dr. William Osler. A portrait of Dr. Osler is to be painted and placed in the hall of the faculty in Baltimore.

Personal.—Dr. Herbert L. Rich, of the science department of Western Maryland College, has been made a resident physician of the Jacob Tome Institute, Port Deposit.——Dr. J. B. Schwatka returned from Europe September 16.——Dr. Herman Bruelle has gone on a southern trip, and will visit Fredericksburg.——Dr. William Hewson Baltzell will spend the winter in Rome.

Baltimore.

Lowered Mortality.—The mortality rate last week was at the annual rate of 15.48 per 1,000, viz.: white, 14.00; colored, 23.52; for the previous week the respective rates were 20.47, 16.95, and 39.62 per 1,000.

College Opens.—The course at the College of Physicians and Surgeons will open the evening of September 30, with an address by Prof. Wm. Royal Stokes, who will speak on "Some of the Great Achievements of the Last Century."

MASSACHUSETTS.

Surgical Building Offered.—The Brockton Hospital Corporation has accepted a surgical building donated by Hon. William L. Douglass, to cost $22,000.

Alleged Counterfeiter Held.—Dr. Frank Sanft, at whose house in Roxbury $10,000 in counterfeit money was found, has been held to the grand jury.

Hospital Building Permit Granted.—Permission has been granted to the Waltham Hospital Association to build a two-story concrete building, to cost $25,000.

Member Expelled.—Dr. George S. Hatch, Boston, formerly of Pittsfield, and now a fugitive from justice, was expelled from the Berkshire District Medical Society at its meeting last month.

Imprisoned for Refusing Vaccination.—A resident of North Adams is serving a sentence of eight days in the House of Correction for refusing to be vaccinated. He will not only have to serve out his time, but, in accordance with the rule of the institution, must be vaccinated.

Personal.—Dr. Charles G. Stearns, Leicester, has retired on account of impaired health.——Dr. Nathaniel Wallis, Fitchburg, will soon start for Australia.——Dr. Julian D. Lucas, Chelsea, has been made assistant to the medical officer of the port of Boston.——Dr. William L. Smith, Worcester, has been appointed honorary physician to the Shah of Persia.——Dr. John A. Bruce, Everett, is taking a four months' tour of Europe.

MICHIGAN.

Fire Loss.—At a fire which at one time threatened to destroy all the business section of North Branch, the office of Dr. Albert E. Weed, with its contents, was entirely consumed. No insurance was carried.

Pre-Medical Examination.—The examination for entrance to Michigan medical colleges, for students who have not received diplomas from high schools or colleges, was held in Detroit, September 14 and 15, under the direction of the Michigan State Board of Registration in Medicine.

The Most Dangerous Communicable Diseases.—Meningitis was reported during August at 7 places; whooping cough at 24 places; pneumonia at 26 places; measles at 38 places; diphtheria at 66 places; scarlet fever at 74 places; smallpox at 106 places; typhoid fever at 161 places, and consumption at 295 places. Meningitis was reported at 1 place less; whooping cough at 10 places more; pneumonia at 6 places more; measles at 35 places less; diphtheria at 9 places more; scarlet fever at 4 places more; smallpox at 10 places less; typhoid fever at 88 places more; and consumption at 7 places more in August than in July.

Comparative Disease Prevalence.—For August, 1904, compared with the average for August in the last 10 years, pleuritis, smallpox and diphtheria were more than usually prevalent; and cholera infantum, dysentery, intermittent fever, erysipelas, remittent fever, whooping cough, pneumonia, measles, and inflammation of brain were less than usually prevalent. This lessened prevalence was probably due, in great part, to the lower than average temperature during the month. So far this year, in Michigan, the average temperature each month has been lower than the average for the ten years preceding.

August Mortality of Michigan.—There were 2,593 deaths during August, 83 more than in the previous month. The death-rate was 12.1 per 1,000 population. By ages there were 376 deaths of infants under 1 year of age, 199 deaths of children aged 1 to 4 years, and 677 deaths of persons aged 65 years and over. Important causes of death were as follows: Tuberculosis, 190; typhoid fever, 41; diphtheria, 20; scarlet fever, 7; measles, 3; whooping cough, 7; pneumonia, 56; diarrheal diseases, under 2 years, 331; meningitis, 29; cancer, 134, and accidents and violence, 203. The mortality from typhoid fever and diarrheal diseases showed the customary seasonal increase.

MISSOURI.

Medical Schools Open.—University Medical College, Kansas City held its opening exercises September 6, and Central Medical College and Ensworth Medical College, St. Joseph, September 15.

Gift to Hospital Fund.—The St. Joseph's Orphan Society, a charitable organization of Jefferson City, has given all its assets, amounting to $2,298, to the new hospital of the Sisters of St. Mary, now being erected at Jefferson City, at a cost of $75,000.

Epidemic at Wien.—An infectious disease resembling tropical dysentery has been raging for six weeks among the children of Wien, Chariton County. Fifteen children have died, and many are seriously ill. The State Board of Health is making a strict investigation into the nature of the disease.

Personal.—Drs. Frank L. Whelpley and William J. Loler have been appointed assistant physicians at the St. Louis Insane Asylum.——Dr. Joseph F. Robinson has been re-elected superintendent of State Hospital for the Insane No. 3, Nevada.——Dr. F. L. Sutton, Sedalia, has returned after an absence of a year on account of ill health, and has resumed practice.——Dr. John R. A. Crossland, St. Joseph, was recently shot in the course of an altercation with a brother practitioner. He will recover.

NEW YORK.

Personal.—Dr. Wallace Clarke, Utica, has been appointed by the State Commissioners of Health a smallpox expert in his department.——Dr. Clarence A. Potter, Gowanda, has been appointed first assistant physician at the Gowanda State Hospital.

Buffalo.

Personal.—Dr. Charles G. Stockton has returned from Europe.——Dr. Emil S. Tobie will soon sail for Europe.——Dr. John Hauenstein, oldest practitioner in the city, recently celebrated the seventy-third anniversary of his arrival in Buffalo.——Dr. Francis E. Fronczak was re-elected general medical examiner of the National Polish Union at its last convention.

Vital Statistics of August.—The monthly report of the department of health for August shows an annual death rate of 15.37 per 1,000. The principal causes of death were: Consumption, 40; cholera infantum, 67; typhoid fever, 4; debility, 30; cancer, 18; apoplexy, 16; meningitis, 11; valvular heart disease, 2; pneumonia, 17; appendicitis, 9; diarrhea, 15; dysentery, 10; enterocolitis, 15; gastro-enteritis, 25; ileocolitis, 10; nephritis, 14, and violence, 31. The total deaths for August were 487, as compared with 538 deaths for August, 1903.

Scarlet Fever from Infected Milk.—An epidemic of scarlet fever has occurred which is directly attributable to milk supplied to the families. This milk is supplied by the Certified Milk Company from dairies in Elma. Two years ago these dairies were inspected by a number of Buffalo physicians, who refused to certify that the milk as then handled was cleanly. In this present epidemic it has been found that the daughters of the man who milks the cows has scarlet fever, and that the son of the proprietor of the dairy also had the disease. The health authorities have stopped the further supply of milk from this source and reported the matter to the State Department of Health, which has jurisdiction. State Health Inspector Dr. Johnson of Albany has arrived to make an investigation of the scarlet fever epidemic. Dr. Henry R. Hopkins, in an open letter to the Buffalo *Express*, holds the health commissioner to blame in that he allowed the sale of infected milk when the milk register inaugurated by the former health commissioner showed a number of scarlet fever cases on the milk route of the Certified Milk Company. It is deplorable that the health officer of Elma did not stop the supply of milk from the infected dairy at Elma as soon as he knew that scarlet fever existed on the premises. One death has already occurred, it is claimed, as a result of this infection, that of Mrs. Sicard. A further epidemic of scarlet fever in which 10 cases have already occurred has been traced to the milk supplied by another dairy. The sale of this milk has been promptly stopped by the health department.

New York City.

Pasteurized Milk Stations Closed.—The summer season of Nathan Straus' pasteurized milk depots has closed. During the summer 2,149,194 bottles were distributed, and more than 800,000 glasses of milk were sold in the parks and recreation piers.

Bellevue Doctors Want Men Servants.—The president of Bellevue Hospital Medical Board recently issued an order that hereafter women should be employed as servants for the hospital internes. The 44 physicians and surgeons interested have made a formal protest asking the president to revoke his order.

Better Pay at Bellevue.—To obtain better service from a better class of men, the pay of orderlies at Bellevue Hospital has been raised to $30 per month, and each will be held strictly accountable for the accuracy of his work. It is hoped that this will do away with many complaints of ill treatment at this institution.

Contagious Diseases.—In the week ended September 17 there were reported 391 cases of tuberculosis, with 139 deaths; 176 cases of diphtheria, with 25 deaths; 146 cases of typhoid fever, with 21 deaths; 60 cases of scarlet fever, with 2 deaths; 40 cases of measles, with 8 deaths; 2 cases of varicella and 15 deaths from cerebrospinal meningitis.

Personal.—Dr. Alexander Lambert has gone to Canada moose hunting.——Dr. James R. Healy has recently undergone a serious operation at Roosevelt Hospital, and is now convalescing.——Dr. H. Holbrook Curtis arrived from Europe September 17.——Dr. Follen Cabot, Jr., has been appointed genito-urinary surgeon to the City (Charity) Hospital.

Bequests.—Under the will of the late Solomon Gerber the Lebanon Hospital and the Home for Aged and Infirm Hebrews each received a bequest of $250.——Under Dr. Henry Tuck's will the New York Society for the Relief of Widows and

Orphans of Medical Men of New York City, the Society for the Prevention of Cruelty to Children and the New York Charities Organization Society were the recipients of generous legacies.

Begin to Fight Trachoma.—The board of health inspectors have begun the work of examining the eyes of all school children for trachoma. Every child affected with the disease is kept from school until an operation has been performed or treatment initiated. A new trachoma hospital has been opened where the operations will be performed by the department free of charge.

Physicians' Aid Association Prosperous.—The recent report of the New York Physicians' Mutual Aid Association, now in its thirty-fifth year, shows the organization to be in a very prosperous condition, with a membership of nearly 2,000. The association has on hand a permanent fund of nearly $50,000. Much good has been done in relieving its members during periods of illness, and in paying the families of deceased members $1,000 each.

Cornell University Medical College.—Dr. Frederick Whiting has been appointed professor of otology vice Dr. Gorham Bacon, resigned.——Dr. Adolf Meyer has been appointed professor of psychiatry vice Dr. Allan McLane Hamilton, resigned.——Many students are registered for the coming first year class to begin work on September 28. The campaign carried on so vigorously in the medical press for better preliminary education is beginning to bear fruit, for 78 per cent. of those applying present evidence of having studied chemistry and physics.

Druggists Protest.—Committees of druggists have been appointed to wait on Commissioner Darlington and ask him to rescind or modify his recent ruling that pure carbolic acid must not be sold except on the presentation of an order from a licensed physician. The druggists claim that the health department is usurping the functions of the State Board of Pharmacy by amending the sanitary code so as to regulate the sale of poisons. This move is also viewed with alarm because it can not be seen where the commission may stop. If it is permitted to discriminate in regard to carbolic acid there would be nothing to prevent its making regulations in regard to the sale of opium, morphin, cocain, or even whiskey or beer.

PENNSYLVANIA.

Nominated for Congress.—Dr. Salem Heilman, Sharon, has been nominated as Democratic candidate for congress.

Personal.—Dr. George D. Morton, Moores, has been named a member of the board of health, vice Dr. A. C. H. Schneider, deceased.

New Staff Members at Reading Hospital.—Dr. Harry F. Rentschler has been made assistant physician, vice Dr. John Shartle, resigned.——Dr. Frank G. Runyeon has been nominated as assistant to Dr. William S. Bertolet.——Drs. Fred L. R. Mattern and George W. Overholser were made assistant physicians.

Charged with Illegal Practice.—Drs. Joseph C. Denston, Emilie D'Antonio and Guiseppe Villone, Scranton, have had warrants issued for their arrest on the charge that they violated the act of 1893, which provides that every physician practicing medicine in Pennsylvania shall have a certificate from the State Board of Examiners and that this certificate shall be shown to the prothonotary of each county, who shall register the physician.

Philadelphia.

Bequest.—By the terms of the will of Amos Wert $5,000 is given to the Methodist Hospital to provide a free bed to be known as the "Wert bed."

Physician Robbed.—Dr. Berthold Trautmann's residence was entered by burglars, September 13, who secured a large amount of clothing, a watch and a moderate sum of money.

Personal.—Dr. and Mrs. Donnell Hughes, Dr. and Mrs. George C. Stout, and Dr. and Mrs. Charles P. Noble, have returned home after spending the summer in Europe.——Dr. W. L. Rodman has removed his residence and office to 1904 Chestnut Street.

Germantown Hospital.—The new building of the Germantown Hospital for the treatment of private patients has been completed and was opened for inspection September 12. The building is a three-story brick and stone structure, and has accommodations for 25 patients.

Pink Eye Prevalent.—An epidemic of pink eye prevails in the northwestern part of the city, particularly among school children. On account of the highly contagious character of the disease, medical inspectors from the Bureau of Health have been detailed to inspect the schools and suspend all afflicted children.

Work at Hospitals.—In the Presbyterian Hospital 405 patients were admitted and treated during August. In the dispensary 2,744 patients were treated.——Thirty-four patients were admitted to the Howard Hospital and 1,033 were treated in the dispensary.——Sixty patients were admitted to St. Timothy's Memorial Hospital, and 161 were treated in the out-patient service.

Health Report.—The prevalence of typhoid fever shows no abatement, the report for the week shows the presence of 134 cases, an increase of 34 over the previous week, with 15 deaths, an increase of one over the preceding week. There are only four wards in which no new cases were reported. The total number of deaths for the week was 408, an increase of 8 over last week, and a decrease of 10 compared with the corresponding period of 1903. In all there were 234 cases of contagious disease reported, an increase of 29 over last week.

Work of City's Bacteriologic Department.—Since the establishment of the bacteriologic laboratory in 1897, 32,878 Widal examinations have been made, representing 28,375 cases of typhoid fever. Statistics show that in 1894 when the use of antitoxin went into effect, 33.3 per cent of the cases of diphtheria reported to the Bureau were fatal. Since the use of the agent has become more general in the city, the mortality is much lower. Last year a mortality of only 17.1 per cent. was reported. Since 1896 there have been 38,981 doses of antitoxin distributed by the city. The milk report of the department for July and August of this year, shows that in July 15,447 quarts were examined; 8,679 quarts were condemned, and 5,958 quarts were infected. In August 194,581 quarts were examined, 6,400 quarts were condemned, and 3,449 quarts were infected, making a total of 353,028 quarts examined, 15,079 quarts condemned, and 9,407 quarts infected.

GENERAL.

Typhoid in Winnipeg.—The number of typhoid patients in the Winnipeg (Man.) General Hospital one week ago numbered 130.

Panama Canal Hospital.—New Orleans is to be the site of a hospital built by the United States Government for Panama Canal patients.

Lack of Physicians for the Poor.—It is stated that the reduction in the force of government physicians in Hawaii has caused a return on the part of many natives to the witch doctors and that the death rate is increasing.

The Dental Congress.—At the Fourth International Dental Congress held at St. Louis, September 1, a gold medal was offered for the best paper. Ten papers were submitted. Willoughby D. Miller, Berlin, Germany, received the medal, and Eugene S. Talbot, Chicago, received honorable mention for the second and third best papers.

Foreign Visitors.—Among the noted medical men from abroad who are speakers at the International Congress of Arts and Science at St. Louis are Dr. Ronald Ross, Liverpool; Dr. Shibasaburo Kitasato, Tokio, Japan, and Dr. Theodore Escherich, Vienna. Dr. Ross, the great authority on malaria, will visit Panama and Jamaica before returning to Europe. While Dr. Escherich was in Albany, N. Y., a reception was given in his honor by Drs. Henry L. K. Shaw and Andrew McFarlane, September 12, and on the following evening Dr. Albert Vander Veer gave a dinner in his honor at the Fort Orange Club. In Chicago, Dr. Escherich addressed the Chicago Medical and Chicago Pediatric societies, and was given a banquet. He also made an address in the amphitheater of Cook County Hospital. While in Chicago he was the guest of Dr. A. C. Cotton, who gave a reception in his honor. Dr. Kitasato, the famous bacteriologist of Japan, received a very warm greeting in Honolulu. The Hawaiian Territorial Medical Association gave him a reception and banquet, and there were other functions in his honor.

THE RECENT ARMY MANEUVERS.

Field Practice for the Army Medical Department.

(From our Special Correspondent.)

The recent maneuvers in Virginia have attracted much public interest, both because the number of troops participating was

far larger than has ever before been assembled in this country in time of peace for such a purpose, and because the extensive area covered by them embraced the historic fields of the first and second battles of Bull Run.

The operations of the medical department of the two maneuver divisions, the "Blues" and "Browns," which together mustered 26,000 men, presented several features of interest. The medical organization comprised the regimental dispensaries, field hospitals, and a base hospital for each army. The function of the regimental dispensaries was to render first aid on the march and in battle and to treat in camp the mild cases which did not require transfer to the base hospitals. The personnel of these was, for the state troops, furnished by their own medical officers and hospital corps men, and they brought with them the medical equipment furnished by their respective states. Many of the regiments had the new U. S. Army regimental field chests and pouches recently issued to the states under the provisions of the Dick militia bill, while, in the case of others, the medical equipment was more or less obsolete or wanting. Some regiments brought surgeons, but no hospital corps men: "broom handles, but no brooms." There were two field hospitals and two ambulance companies for each army. These were manned and equipped, as were the base hospitals, by the Medical Department of the Regular Army, although surgeons and hospital corps men were taken from such militia regiments as could spare them, and attached to these organizations for purposes of instruction and to fill up as far as possible their shortages in personnel.

The field hospitals are mobile organizations, which march with the troops, there being theoretically one for each brigade. Their function is to give temporary care and shelter to the wounded after battles until they can be transferred to a stationary or base hospital, where can be found the rest and elaborate equipment which field hospitals can not afford.

The ambulance company is in battle the connecting link between the regimental dressing stations on the line of battle and the field hospital in the rear. The widely extended order of modern tactics and the great range of rifles and artillery make this gap a broad one, and the duties of the bearers and ambulances correspondingly arduous. In these maneuvers the labors of the ambulance companies were, however, much lightened by the military ardor of the soldiers designated to play the part of the wounded, for these, being unwilling to leave the exciting scenes at the front, in most cases concealed their tags in their pockets or dropped them behind a convenient bush and remained in action. But though wounded were lacking there were abundant applicants for seats in the ambulances on the part of the undeveloped youths whose strength was not equal to the burden of the blanket roll, rifle and haversack, and who strewed the roadsides during the first maneuver. Later these were left to guard the camps.

The two base hospitals at Thoroughfare and Manassas respectively were models of complete equipment and orderly administration. These received all serious cases of illness or injury which required treatment in bed. Each had the capacity of a field hospital, namely, 108 beds, and while neither was at any time full, several hundred patients were treated in them, including some severe cases of injury, such as fracture of the femur, ulna, radius and clavicle, and one penetrating gunshot wound of the chest caused by the paper bullet of a rifle blank cartridge. The paper bullet usually flies to pieces at the muzzle of the rifle, but in this case the weapon was discharged nearly or actually in contact with the body of the soldier and the conical wad penetrated the blouse, shirt and chest wall in the region of the liver. There was severe shock, but under an aseptic occlusive dressing the wound has done well and the patient is expected to recover.

These maneuvers have been of the greatest educational value to the medical personnel, beside affording an opportunity to test the medical organization and equipment on a large scale. Their value to the state troops would have been vastly increased could they have arrived in camp several days before the beginning of the field operations so as to have had an opportunity to have gained coherence of organization by regimental and brigade drills. This would also have afforded time for the instruction of the regimental medical personnel in their duties. As, however, the movements began the day after the troops assembled, no time was given for the regimental surgeons to learn their place and function in the scheme of medical organization, and some lack of co-ordination was the natural result.

FOREIGN.

Plague is reported in Paraguay and the sanitary conditions are not such as to promise its ready extermination.

Italian Hospital Receives Gift.—The Italian Hospital in the City of Mexico has received $2,000 from King Victor Emmanuel.

European Physicians Studying Yellow Fever in the Americas.—The French committee now in Brazil consists of Drs. Marchoux, Simoni and Salimbeni. Dr. G. Cecchi is in Mexico for the same purpose, delegated by the Italian government. The Associated Press report for the week states that there are only fifteen cases of the disease in all Mexico, and half of these are in the hospital at Vera Cruz. This is a remarkably favorable showing for the month of September, and demonstrates what has been accomplished in the way of preventive sanitation.

Cholera in Persia.—The *Tribune Méd*, comments on the fact that one province of Persia, of which Tauris is the capital, has remained free from cholera during the epidemic that has been devastating the country. The crown prince resides there and his physician was trained in the medical schools of Paris. They co-operated to prevent the importation of the disease, establishing quarantine stations and adopting the measures necessary to stamp out the few cases known to exist. Their efforts were successful, and probably for the first time in history a Persian city has passed unharmed through an epidemic of cholera sweeping over the country. A St. Petersburg exchange states that the disease is still spreading. The deaths in Meschhed numbered 417 between July 26 and August 1. Refugees from this place have carried the disease into Russia, and a Cossack regiment at Merw has become infected, 9 deaths in 53 cases being reported, among the dead being the troop physician. There have also been 9 deaths in 13 cases in the town. The shipping on the Caspian and travel on the central Asiatic railroad is under medical inspection.

DUBLIN LETTER.

Smallpox in Ireland.

Considering how widely distributed smallpox has been in England and Scotland during the past few years Ireland is fortunate in having escaped without any outbreak that could receive the name of epidemic. Both Dublin and Belfast had a considerable number of cases last year, but in neither city did the disease spread to any great extent, and the number of deaths was very small. This is no doubt due chiefly to the very efficient system of vaccination practiced in Ireland, where neither 'conscientious objectors" nor "antivacs" are known. This year, while there is nothing in the nature of an outbreak at any center, several cases of smallpox have been reported from various towns throughout the country. In Armagh, a town of seven thousand inhabitants, there have been over twenty cases, while in Drogheda, Monaghan, Castleblayney and Dublin smaller numbers are reported. The infection seems to have been imported from Glasgow to Drogheda and Armagh, whence it has spread to the other places mentioned.

The Queen's Colleges.

The annual reports from the presidents of the Queen's Colleges of Belfast and Cork, which have recently appeared, give evidence of increased activity in both those institutions. In Belfast, in particular, advance, during the past few years, has been very rapid. Following on the establishment of the Royal Victoria Hospital, and in part as a result of the opportunities it gives for clinical work, the Belfast School of Medicine is now one of the largest in the Kingdom. It is stated that the number of students on the roll this year is greater than that of any other school in Ireland, with the exception of the Catholic University School in Dublin, while only two English schools—Cambridge University and Guy's Hospital—exceed it. The college in Belfast has recently received special funds to provide for pathologic research and teaching, in the endowment of a Musgrave chair and a Riddel demonstratorship in pathology. In none of the Queen's Colleges did the original scheme include a chair of pathology, so that considerable diffi-

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culty has been met in providing for the teaching of that subject, but it has now been successfully coped with in all three colleges. Great regret is expressed at the departure from Belfast of Dr. Lorrain Smith, who has accepted the chair of pathologic anatomy in the Victoria University of Manchester. The president of the Cork College, Sir Rowland Blennerhassett, has, in consequence of ill health, resigned his office. He was given this post, for which he was little fitted, a few years ago as a reward of political services, but it occupied only a small share of his time, as he spent most of each year on the continent.

Sir Thomas Browne and the Medical Profession.

The proposal which is before the public at present to raise a memorial to the author of "Religio Medici" has roused the wrath of Dr. Conolly Norman, the well-known alienist of this city, and he appears in the columns of the *British Medical Journal* in the character of *advocatus diaboli*. Whatever claims Sir Thomas Browne has to the admiration of merely literary people, as a great master of English prose, he has no claim whatever, says Dr. Norman, in effect, to the respect of the medical profession. He is not a great physician, since he is neither scientific nor humane. For proof of the first of these charges Dr. Norman refers to Browne's works and thinks the charges is justified, while the second charge is based on his action in the trial of the women Demy and Cullender at Bury in 1664, on the charge of causing fits in children by witchcraft. "Sir Thomas Browne of Norwich, the famous physician of his time, was in court and was desired by my lord the chief baron to give his judgment in the case, and he declared that he was clearly of opinion that the fits were natural, but heightened by the devil, co-operating with the malice of the witches, at whose instance he did the villainies." Browne's great influence turned the jury, and the women were condemned. Dr. Norman thinks that belief of this sort in an educated man—a contemporary of Hobbes, Butler and Locke—deprives him of respect from men of science. Many lovers of letters who demand thought as well as expression will thank Dr. Norman for his very just depreciation of one of the most over-rated persons in the history of literature.

Death of Dr. Cranny.

Yet another of Dublin's best-known surgeons has died. Within the last twelve months no less than five—Croly, Smyly, Meldon, Hayes, Cranny—living within a stone's throw, have been removed by death. Dr. John Joseph Cranny, as a young man, was assistant master in the Rotunda Hospital, but of late years had devoted himself altogether to surgery, and for many years before his death was on the surgical staff of Jervis Street Hospital. For some years past he had been in bad health, but his death came nevertheless as a shock to his many friends.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

CONTRACT PRACTICE.

A physician of West Virginia writes us in regard to contract practice, and states that he has never been satisfied "that it was an altogether ethical practice for a reputable practitioner to engage in. This system is much in vogue in my locality and throughout the mining section of our state. The company or contract physician at the mines agrees for the sum of 50 cents per month for single men and $1.00 per month for men with families to furnish them the necessary medicines and medical and surgical attention. The companies hold back out of the wages of their employes the above-mentioned amounts and turn it over to their physician, less 10 or 20 per cent. for collecting." He goes on to say that "this system might be considered a blessing to a very improvident class of people, but I have always thought it was prostituting the practice of the profession too far. It seems to me it would be more in keeping with the dignity of our profession to let them call on whom they please, when needed, and pay accordingly. Your opinion in the Queries and Minor Notes' column would be appreciated."

ANSWER.—From a professional standpoint, nothing good can be said for the so-called "contract" practice to which our correspondent refers. Those who undertake it cheapen the public estimate of our profession. In a few instances county societies have adopted by-laws against the practice, declaring it to be unprofessional conduct. It would not be a bad thing for the profession if all county societies would do likewise. For the man who undertakes "contract" practice there is "nothing in it"—no future, no satisfaction, no adequate compensation, nothing attractive. A strike cuts it short; a corporation shares the income, without adequate pretext. Analyzed, the practice is merely a poorly modified form of health insurance, or, as our British confrères call it, "club practice." The method outlined above, which is the one usually followed, is bad. The doctor sells himself cheap, the employes get what they pay for—and no more. A much better method, not so profitable to the corporation, nor so degrading to medicine, would be the creation of a relief fund by an assessment on the employes, collected monthly by the company without charge. Then a minimum but fair scale of fees for definite services should be agreed on and the physician paid accordingly, each employe to select whomsoever he pleases. Of course, in time of epidemics or disaster, the assessment would increase and in healthy periods would recede, but this could be equalized by an average assessment to cover all conditions. It is high time that our profession insisted on the universal adoption in corporation or company practice of some such plan as this, and then see to it that no recognized physician underbids his fellow. This is by no means Utopian. Some corporations have voluntarily adopted a plan similar to this, contributing regularly themselves to the fund, and the result has been satisfactory. We wish that this matter might be taken up by county societies that are affected.

LIQUOR FERRI ALBUMINATI.

A correspondent calls attention to an abstract on page 1121 of THE JOURNAL, April 26, 1902, in which an author is quoted as saying that the standard liquor ferri albuminati of the Norwegian Pharmacopeia is the best means of administering iron, and desires to know the formula and the method for its preparation.

ANSWER.—There is no formula for this preparation in the Norwegian Pharmacopeia. There is a formula in the Danish Pharmacopeia (1893), but it is an exceedingly poor one. The latest Swedish Pharmacopeia (1901) gives the following excellent formula: Take of, by weight in grams:

Dried egg albumin	40
Solution sodium hydroxid	5
Solution ferric chlorid (50 per cent.)	120
Glycerin	10
Alcohol	100
Cinnamon water, alcoholic, 10 per cent	150
Aromatic tincture	2
Distilled water, to make	1000

The egg albumin is dissolved by shaking in a mixture of 2 grams of the soda solution and 1,000 of water heated to 50 C.; after standing 24 hours the solution is decanted and strained, then warmed to 50 C., is slowly poured, with constant stirring, into a mixture of the ferric chlorid solution and the water. The resulting precipitate is collected and washed with tepid water till the washings, acidified with nitric acid, are only slightly opalescent with silver nitrate, allowed to drain and then mixed with 60 of water to which the remaining 3 grains soda solution has previously been added. The mixture is then heated on the water bath to 80 C. and allowed to cool, when the alcohol, cinnamon water and aromatic tincture are added, together with water to make 1,000 grams. The solution represents 4 per mille iron. It must be kept in bottles protected against light.

PHYSICIANS' CARDS.

FREDERICKTOWN, OHIO, Sept. 5, 1904.

To the Editor:—Please inform me, through "Queries and Minor Notes," the proper form for cards for medical men—not for business, but for social purposes. E. V. A.

ANSWER.—This is wholly a matter of individual taste. The following forms are merely suggestive, but are acceptable anywhere:

DR. JOHN DOE.

JAMES JOHNSON, M.D.
2735 INDIANA AVE.

DR. ALBERT SMITH.
65 Pennsylvania Ave. NEW YORK CITY.

OSCAR O. JONES, M.D.,
NEW ORLEANS.

The above forms are social only. Business cards may properly present office and residence addresses, telephone numbers, and office hours.

EXAMINATION OF MILK.

RADCLIFFE, IOWA, Sept. 14, 1904.

To the Editor:—Will you please inform me where I can find "Babcock's Method of Examination of Milk," or state how the percentage of fat is obtained by him?

HANS PETERSEN, A.B., M.D.

ANSWER.—Send for eighth Report of the Wisconsin Agricultural Experiment Station, Madison, Wis.

ABSENCE DOES NOT INVALIDATE LICENSE.

DE FOREST, WIS., Sept. 10, 1904.

To the Editor:—I graduated from the College of P. and S., Chicago, in 1886, obtained a medical license and practiced part of the same year in Chicago, but not since. Would the same license permit me to legally practice in Illinois now? J. H. B.

ANSWER.—Yes.

Marriages.

LEWIS C. DOW, M.D., to Miss Alice Lillie, both of Marion, Iowa, September 19.

WILLIAM J. AWTY, M.D., Moorhead, Minn., to Miss Ethel Lord of Charleston, Ill.

RALPH CLINTON CUPLER, M.D., to Mrs. Isabella Larkin, both of Chicago, September 1.

C. GRAHAM DOLD, M.D., to Miss Linda Peyton Manly, both of Lexington, Va., September 7.

MURDOCH BANNISTER, M.D., to Miss Keola Winona Williams, both of Ottumwa, Iowa, September 7.

GARLAND LIGHTFOOT MORRIS, M.D., to Miss Marie Louise Rice, at Manchester, Va., September 7.

JAMES CLAGETT ROBERTSON, M.D., to Miss Katherine F. Groppel, both of Baltimore, September 14.

JOSEPH L. ABELN, M.D., New Vienna, Iowa, to Miss Anna Luthmers of Dubuque, Iowa, September 6.

HOWARD B. HAMILTON, M.D., Ainsworth, Iowa, to Miss Olive McClenahan of Monmouth, Ill., September 21.

MARTIN L. BROOKSHIER, M.D., Graymont, Ill., to Miss Josephine Beier of Weldon, Ill., September 7.

HORACE WARDNER EGGLESTON, M.D., to Miss Mable May Dunn, both of Binghamton, N. Y., September 8.

JAMES MCCANN STODDARD, M.D., Kennard, Ind., to Miss Ruby Eunice Palmer of Anderson, Ind., September 7.

A. BERNARD KUHL, M.D., Walnut, Iowa, to Miss Elizabeth Munchrath of Davenport, Iowa, September 12.

SAMUEL W. HUSTON, M.D., Perry, Iowa, to Miss Elizabeth J. Owen of Columbus Junction, Iowa, September 13.

WILLIAM DUNN POWELL, M.D., Harrodsburg, Ky., to Miss Jane Cecilia Wise, at Leesburg, Va., September 3.

RAYMOND V. GLANN, M.D., of Apalachia, N. Y., to Miss Amelia Mewshaw, at Glen Burnie, Md., September 4.

DAVID ESTE WEATHERHEAD, M.D., Cincinnati, to Miss Clara Virginia Yates of Covington, Ky., at Chicago, September 8.

JUSTIN FRANK GRANT, M.D., Morgantown, W. Va., to Miss Emily Jenks Bray of Boston, at Wilton, N. H., September 7.

GEORGE KETCHAM HAGAMAN, M.D., North St. Paul, Minn., to Miss Mary Wilson Fagundus of Minneapolis, September 14.

WILLIAM H. HUDSON, M.D., Atchison, Kan., to Miss Esther L. Shreve of Chatham, Ont., at Kansas City, Kan., September 5.

WILLIAM BAY STOKER, M.D., Harvard, Iowa, to Miss Malisse Helen Shadley of Belknap, Iowa, at Shenandoah, Iowa, September 2.

Deaths.

Alexander Trent Clark, M.D. Medical College of Virginia, Richmond, 1869, for many years chairman of the Halifax County Board of Health, and once a member of the State Board of Medical Examiners, died at his home in South Boston, Va., September 10, after an illness of several months, aged 62.

William L. Buechner, M.D. University of Giessen, Germany, 1853, one of the oldest practitioners of Youngstown, Ohio, and a founder of the City Hospital, was drowned, September 11, in a runaway accident near Youngstown, in which his horse plunged over an embankment and into a ravine, aged 73.

Charles M. Baker, M.D. Transylvania University Medical Department, Lexington, Ky., 1843, for many years a practitioner, and twice mayor of Henry, Ill., died at the Illinois Western Hospital for the Insane, Watertown, of which he had been an inmate for several years, September 3, aged 82.

Martin S. Kittinger, M.D. College of Physicians and Surgeons in the City of New York, 1853, surgeon with the Army of the Potomac during the Civil War, some-time president of the Niagara County Medical Society, died at his home in Lockport, N. Y., September 11, after a long illness, aged 77.

Edward Payson Buffett, M.D. College of Physicians and Surgeons in the City of New York, 1857, for many years visiting surgeon at Christ's Hospital and the City Hospital, Jersey City, N. J., died at his home in that city, September 9, from heart disease, after an illness of seven months, aged 70.

John Cascaden, M.D. College of Physicians and Surgeons of Ontario, Toronto, 1866, at one time representative for West Elgin in the Ontario Legislature, died at his home in Dutton, Ont., August 31, after an illness of three months, aged 64.

James McCortney, M.D. Cleveland Medical College, 1853, one of the oldest physicians of Davenport, Iowa, surgeon in the Army during the Civil War, died at the home of his daughter in Chicago, September 8, from cystitis, aged 79.

Felix E. Schilling, M.D. Tulane University, New Orleans, 1903, of Collins, Miss., died at the South Mississippi Infirmary, Hattiesburg, September 12, from typhoid fever, after an illness of four weeks, aged 31.

George M. Kellogg, M.D. Medical College of Ohio, Cincinnati, 1852, formerly of Carthage, Ill., and a lecturer for several years in Keokuk Medical College, died at his home in Pasadena, Cal., August 18, aged 73.

A. W. Butler, M.D. University of Tennessee, Nashville, 1903, formerly interne at the Nashville City Hospital, died suddenly from nervous collapse, September 6, at his home in Nashville, aged 24.

Charles Hinkle, M.D. University of Louisville, 1861, surgeon in the Confederate service during the Civil War, died at his home in Hinkleville, Ky., September 13, after a long illness, aged 66.

Harvey C. Chappelear, M.D. Cincinnati College of Medicine and Surgery, 1871, died at his home in Mount Sterling, Ohio, September 14, after a long invalidism, from asthma.

James R. Kelch, M.D. Starling Medical College, Columbus, Ohio, 1864, assistant surgeon of the 155th Ohio Volunteer Infantry in the Civil War, died suddenly at his home in Tarlton, Ohio, September 4, from heart disease, aged 70.

Richard J. Ough, M.D. University of the Queen's College, Coburg, Ont., 1869, supreme physician of the United Order of Foresters, died at his home in Chicago, September 11, aged 65.

Emery F. Redfern, M.D. Ohio, of South Perry, assistant surgeon in the 90th Ohio Volunteer Infantry in the Civil War, died recently, and was buried at South Perry, September 4.

William M. Gough, M.D. University of Louisville, 1848, surgeon in the Confederate service during the Civil War, died at his home in Los Angeles, Cal., September 7, aged 79.

Christine Anderson, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1888, died at her home in Detroit, Mich., August 29, aged 40.

Charles Walton Chaffee, M.D. College of Physicians and Surgeons of Toronto, 1883, died at his home in Toronto, Ont., May 26, from pneumonia, after a short illness.

H. H. L. Yeargan, M.D. Transylvania University Medical Department, Lexington, Ky., 1846, of Barefield, Tenn., died at his home in that place, September 5, aged 84.

Alfred L. Keene, M.D. Jefferson Medical College, Philadelphia, 1888, died at his home in Lancaster, Pa., September 6, from heart disease, aged 43.

P. W. Crum, M.D., died at Borgess Hospital, Kalamazoo, Mich., six months after a fall in which he fractured his hip, September 2, aged 91.

J. Maude George, M.D. Woman's Medical College, Philadelphia, a medical missionary in China, died at her station in Macao, September 4.

S. Sylvester, M.D. University of the Victoria College, Coburg, Ont., 1878, died suddenly at his home in Montreal, April 2, aged 46.

Isaac Pankake, M.D. Medical College of Ohio, 1886, a member of the American Medical Association, of Frankfort, Ohio, died recently.

Robert S. Cheffey, M.D. College of Physicians and Surgeons of Ontario, Toronto, 1871, died at Toronto, September 11, aged 77.

George L. Smith, M.D. Jefferson Medical College, Philadelphia, 1850, died recently at his home in Groveport, Ohio, aged 79.

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Paul E. Malmstrom, M.D. University of Lund, Sweden, 1890, died at his home in Kenosha, Wis., September 13, from heart disease.

James K. Griffin, M.D. Columbus (Ohio) Medical College, 1878, died suddenly at his home in Fitzgerald, Ga., September 7.

Frank M. Reasner, M.D. Cleveland Medical College, 1865, died at his home in Los Angeles, Cal., September 11, aged about 70.

Francis X. Spranger, M.D. Ohio, 1864, died suddenly at his home in San Jose, Cal., from apoplexy, September 3, aged 61

Thomas E. Morris, M.D. McGill University, Montreal, 1899, died at his home in St. John, N. B., September 8, aged 30.

Willis Duff Green, M.D. Medical College of Ohio, Cincinnati, 1844, died recently at his home in Mount Vernon, Ill.

Albert M. Loop, M.D., a member of the Medical Society of the State of Pennsylvania, died recently at Nelson, Pa.

John T. Smith, M.D., died at his home in Cedar Rapids, Iowa, September 2, after an invalidism of ten years.

W. E. McBryde, M.D., died at his home in Colmesneil, Texas, September 3, from congestion of the brain.

William H. Colvin, M.D. Illinois, 1896, died at his home in Chicago, July 6, from pneumonia, aged 34.

John H. Stork, M.D. Kentucky School of Medicine, 1888, died at his home in Stendal, Ind., September 6.

Albert D. Moxley, M.D. New York, 1877, died suddenly at his home in Jefferson, N. Y., August 1.

A. S. Hayhurst, M.D. Indiana, 1887, died recently at his home in Evansville, Ind., after a long illness.

Thomas S. Lackey, M.D., 1849, died at his home in Mayfield, Ky., September 12, aged 82.

James A. Taylor, M.D., died at his home in Wayne, W. Va., September 6.

Book Notices.

ELEMENTS OF GENERAL RADIOTHERAPY FOR PRACTITIONERS. By Dr. Leopold Freund, Vienna. Translated by G. H. Lancashire, M.D. Brux., M.R.C.S. Eng., L.R.C.P. Lond., Assistant Physician to the Manchester and Salford Hospital for Skin Diseases. With 107 Illustrations in the Text and One Frontispiece. Cloth. Pp. 538-59. Price, $5.00. New York: Rebman Co. 1904.

RADIOTHERAPY, PHOTOTHERAPY AND HIGH FREQUENCY CURRENTS. The Medical and Surgical Applications of Radiology in Diagnosis and Treatment. By Charles Warren Allen, M.D., Professor of Dermatology in the New York Post-Graduate Medical School. With 131 Engravings and 27 Plates. Cloth. Pp. 618. Price, $4.50 net. Philadelphia and New York: Lea Brothers & Co.

The rapidly growing literature on the medical uses of the various forms of radiant force, some of which we have but recently become acquainted with, receives here important additions. Freund's work must be regarded as authoritative and fundamental, especially in so far as concerns the essential scientific principles of radiology. The introductory chapters on physics are more exhaustive than in the other books on radiotherapy. The technic of the practical application of these forces is also comprehensively described. A fully illustrated supplement contains adequate descriptions of the various instruments necessary for using high-frequency currents, *x*-rays, heat and light rays. The index is full and a complete list of the authors quoted, and the page where each may be found, together with the corresponding references, is given. The indications for and results to be expected from the various radiotherapeutic measures are discussed on the basis of the existing literature, but we miss any statements concerning the diagnostic value of *x*-rays. We believe we may safely recommend this book to any one who desires to know the fundamental physical laws underlying radiotherapy, as well as its practical application. It should be remembered that Freund is the man to whom we owe more than to any other the introduction of the Roentgen ray in therapy. The work gives every impression of having a commensurate basis of personal theoretical and practical work on the part of the author.

Dr. Allen's book deals with the *x*-ray, light and high-frequency currents. Here the therapeutic and diagnostic aspects are given predominance, the nature of and laws governing the forces employed, receiving comparatively little attention. It has seemed to the reviewer that there is an unnecessary diffuseness in some of the parts dealing with the therapeutic results of the *x*-ray. Surely much of the information here given in regard to the individual cases cited might well have been condensed into smaller space. Both the works are adequately illustrated, Freund's especially from the side of physics and instrumentation, Allen's from the clinical. The suggestion may be allowed that the field for the works of the kind represented by these two books is now well covered by these and other recent publications; it would, therefore, be better if as much energy and attention as possible were given to investigation of the many and important problems of theoretical and fundamental nature that are arising as a result of the introduction of the physical forces considered into medicine.

A REFERENCE HANDBOOK OF THE MEDICAL SCIENCES, Embracing the Entire Range of Scientific and Practical Medicine and Allied Science. By Various Writers. A New Edition, Completely Revised and Rewritten. Edited by Albert H. Buck, M.D., New York City Volume VIII Illustrated by Chromolithographs and 435 Half-tone and Wood Engravings. Cloth. Pp. 784. Price, $7.00 per volume New York: Wm. Wood & Co. 1904.

This volume completes this issue of the Reference Handbooks. Included in this volume is an appendix which contains articles that from one cause or another were omitted from their regular position in the alphabetical order. A most complete index occupying nearly two hundred pages, three columns to a page, closes the work. This index will be found of great value, as it makes reference to any particular subject easy. In the ordinary works arranged alphabetically as is this one, it is not common to go to the expense and trouble of getting out a detailed index, as has been done here, but, if not necessary, it is certainly very convenient.

In our notices of the volumes as they came out, we have repeatedly spoken of the excellent manner in which the subjects were covered. We have also called attention to the fact that while the handbook is published as a revised edition of a work which came out some twenty years ago, it is in reality a new book. A few articles appear unaltered, a few others are modified but slightly from those appearing in the former edition, but the great bulk have been entirely rewritten, and many subjects appear that were not treated in the former edition. The work is a complete encyclopedia of modern medicine, for so far as we are able to discover, nothing that belongs to such a work is omitted. As a rule, the topics are considered in an exhaustive manner, and if published in individual books not a few of the articles would be accepted as complete monographs on the subjects treated. The editor is to be congratulated on the good judgment displayed in allotting the amount of space to be given to a given subject, not an easy matter when the whole field of medicine had to be covered. He is to be especially congratulated on his selection of the writers for the different subjects. In nearly every instance the one selected is an authority on the subject on which he writes, thus guaranteeing reliability. The publishers are to be congratulated on their liberality in illustrating the work and on presenting it in such a satisfactory manner, from a mechanical and typographical point of view. This Reference Handbook is a library of itself; at least, it makes a good foundation for a complete library.

ADENOIDS. By Wyatt Wingrave, M.D., Physician and Pathologist, Central London Throat and Ear Hospital. Cloth. Pp. 128. Price, $1.00 net. Chicago: W. T. Keener & Co. 1904.

In this little book of 194 pages are discussed clearly the various phases of nasopharyngeal adenoids, a subject in which the medical profession has taken an increasing interest, since the attention was definitely directed thereto by Meyer in 1868. Adenoids are described thoroughly from the anatomic, etiologic and clinical points of view. The operative treatment is given with adequate detail, and a special chapter by Holten George deals with the subject of anesthetics. We can recommend the book to the general practitioner as a trustworthy guide to a thorough understanding of the subject with which it deals.

Miscellany.

A Charity Patient.—A French exchange relates as an anecdote that a woman was given $600 by her husband to pay the expenses of an operation which her physician had declared necessary. She disguised herself as a poor woman and applied to the free public hospital, giving a false address, after having hired the persons at the address given to testify in her favor if questions were asked. She then bought a jewel with the $600 which should have paid for her operation.

Growth of Bacteria in Salt Solutions.—F. Lewandowsky of Strasburg tested a micrococcus and a mesentericus from a vegetable and reports that a 25 per cent. solution of table salt inhibited the growth of the bacteria. On the other hand, they continued to grow apparently unaffected in saturated solutions of potassium nitrate. In a communication to the *Archiv f. Hygiene*, xlix, No. 1, 1904, he ascribes this difference in the action of the solutions to the comparative insolubility of the nitrate and the difference in the molecular concentration and of the specific ions in the two solutions.

Intoxication from Unripe Tomatoes.—A French physician reports in the *Lyon Méd.*, August 21, some cases of illness traced to the eating of tomatoes not perfectly ripe. The discovery of fragments of the tomatoes was the only hint as to the cause of the trouble in the first case. The dilatation of the pupils in all the sick members of the family was a noticeable symptom. As the tomato belongs to the same family as the potato, the intoxication may have been like the solanum poisoning sometimes observed after ingestion of unripe or spoiled potatoes. Recovery was rapid after emptying the stomach.

Automatic Compressive Dressings.—The *Gazette Méd. de Paris* for August 27 contains an illustrated article by P. Mantel of Saint-Omer describing his method of applying a dressing to obtain automatic compression of the parts without straps of any kind. It is shown applied to the head and to the stump after an amputation. The gauze or cotton are applied as usual. Then four or more rather wide strips of gauze are placed flat on the vertex or the bottom of the stump, crossing them at right angles to each other. An assistant pulls on the ends of these strips, and another longer strip of gauze is wound around over them from the periphery toward the center. When this is all in place the loose ends of the crossed strips are brought down over the wound bandage and fastened together flat below. A dressing thus applied to the head does not require any further support, but exerts great pressure on the top of the skull, without the necessity for any straps under the chin or elsewhere.

The Public Service.

Army Changes.

Memorandum of changes of station and duties of medical officers, U. S. Army, week ending Sept. 17, 1904:

Field, Peter C., asst.-surgeon, granted thirty days' leave of absence.

Bratton, Thos. S., asst. surgeon, relieved from duty at Fort Sam Houston, Texas, and ordered to Chicago for duty as attending surgeon and examiner of recruits.

Purviance, Wm. E., surgeon, relieved from duty as attending surgeon and examiner of recruits, Chicago, and ordered to Manila, P. I., for duty.

The following named asst.-surgeons are relieved from duty at posts designated after their names, and will report on Oct. 1, 1904, to Col. Charles L. Heizmann, asst.-surgeon general, president of the faculty, Army Medical School, Army Medical Museum Building, Washington, D. C., for a course of instruction at school: Davis, Wm. R., San Francisco; Owen, Leartus J., Fort Myer, Va.; Zinke, Stanley G., Fort Riley, Kan.; Culler, Robert M., Fort Jay, N. Y.; Weed, Frank W., Fort McHenry, Md.; Wickline, Wm. A., Fort Ethan Allen, Vt.; Brown, Henry L., Columbus Barracks, Ohio; Baily, Howard H., Plattsburg Barracks, N. Y.; Humphreys, Harry G., Fort Totten, N. Y.; Freeman, Paul L., Fort Slocum, N. Y.

Roberts, Wm. M., asst.-surgeon, granted twenty-one days' leave of absence.

Tefft, Wm. H., asst.-surgeon, left Fort Snelling, Minn., for duty at Camp Lakeview, Minn.

Barney, Chas. N., asst.-surgeon, left from duty at Gainesville, Va., on twenty days' leave of absence.

Thornburgh, R. M., asst. surgeon, reports at U. S. Army General Hospital, Washington Barracks, D. C., for temporary duty, from Manassas, Va.

Rockhill, E. P., asst.-surgeon, order for temporary duty at Fort Miley, Cal., revoked.

Chase, A. M., contract surgeon, reports his return to Fort Reno, Okla., from three months' leave of absence.

Burr, R. T., contract surgeon, granted leave of absence for three months.

Bailey, Edward B., contract surgeon, granted leave of absence for one month.

Griswold, W. Church, contract surgeon, granted leave of absence for one month.

Jones, John F., contract surgeon, granted fifteen days' leave of absence.

Marshall, John S., supervising and examining contract dental surgeon, leave of absence extended ten days.

Treuholtz, C. A., contract surgeon, granted leave of absence for two months.

Shellenberger, James E., contract surgeon, granted leave of absence for one month and fifteen days.

Navy Changes.

Changes in the medical corps, U. S. Navy, for the week ending Sept. 17, 1904:

Green, E. H., medical inspector, ordered to the Navy Yard, New York, October 1.

Bertolette, D. N., medical inspector, detached from duty as a member of the naval retiring board and of the naval and medical examining boards, Washington, D. C., and ordered to resume other duties.

Price, A. F., medical director, detached from the Navy Yard, New York, October 1, and ordered to duty as a member of the Naval retiring board, Washington, D. C.

Breck, F. W., pharmacist, ordered to the Naval Hospital, New York.

Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service, for the seven days ended Sept. 14, 1904:

Purviance, George, asst. surgeon general, granted extension of leave of absence for one month from Sept. 1, 1904, on account of sickness.

Vaughan, G. T., asst.-surgeon general, detailed to represent the service at meeting of the Association of Military Surgeons, to be held at St. Louis, Mo., Oct. 10-15, 1904.

Peckham, C. T., surgeon, granted leave of absence for one month from October 8.

Wertenbaker, C. P., surgeon, detailed to represent the service at the meeting of the Association of Military Surgeons, to be held at St. Louis, Mo., Oct. 10-15, 1904.

Wickes, H. W., P. A. surgeon, directed to proceed to Wilmington, Del., for special temporary duty.

Parker, H. R., P. A. surgeon, granted leave of absence for one month from October 1.

Robertson, H. McG., asst.-surgeon, temporarily relieved from duty at Stapleton, N. Y., and directed to proceed to Washington, D. C., and report at the Bureau for temporary duty.

Rucker, W. C., asst.-surgeon, granted leave of absence for four three days from September 8.

Goldsborough, R. W., A. A. surgeon, granted leave of absence for three days from September 8.

Horsey, J. L., A. A. surgeon, granted leave of absence for four teen days from September 10.

Mason, W. C., A. A. surgeon, granted leave of absence for five days from September 19.

Stevenson, J. W., A. A. surgeon, granted leave of absence for seven days from September 3, 1904, on account of sickness.

Tuttle, Jay C., surgeon, granted leave of absence for seven days from September 12.

Goodman, F. S., pharmacist, granted leave of absence for three days from Sept. 3, 1904, under Paragraph 210 of the Regulations.

Scott, E. R., pharmacist, granted leave of absence for twenty-five days from September 19.

Slough, Chas., pharmacist, Department letter of Aug. 3, 1904, granting leave of absence for thirty days from August 10, amended to read nine days from August 17.

RESIGNATION.

Kolb, W. W., pharmacist, resigned, to take effect Sept. 1, 1904.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended Sept. 16, 1904:

SMALLPOX—UNITED STATES.

Florida: At large, Sept. 3-10, 19 cases.
Illinois: Chicago, Sept. 3-10, 1 case.
Indiana: Kokomo, Sept. 3-10, 1 case.
Louisiana: New Orleans, Sept. 3-10, 1 case.
Massachusetts: Sept. 3-10, Lowell, 1 case; North Adams, 5 cases, 1 death.
Michigan: Grand Rapids, Sept. 3-10, 1 case; at 42 places, Aug. 27-Sept. 3, present.
Missouri: St. Louis, Aug. 27-Sept. 10, 5 cases, 2 deaths.
Ohio: Zanesville, Aug. 6-13, 1 case.
Pennsylvania: Philadelphia, Sept. 3-10, 1 case, 1 death.
Tennessee: Nashville, Sept. 3-10, 2 cases.

SMALLPOX—FOREIGN.

Austria-Hungary: Prague, Aug. 20-27, 1 case.
Brazil: Bahia, July 31-Aug. 13, 22 cases, 1 death.
Canada: Belleville, Aug. 29-Sept. 12, 7 cases; Winnipeg, Aug. 13-27, 2 cases.
China: Shanghai, Aug. 4-11, 1 death.
France: Paris, Aug. 20-27, 7 cases.

Great Britain and Ireland: Aug. 20-27, Dublin, 1 case; Leeds, 1 case; Newcastle-on-Tyne, 7 cases; Nottingham, 2 cases; West Hartlepool, 2 cases.
India: Bombay, Aug. 9-16, 1 death.
Italy: Palermo, Aug. 20-27, 14 cases, 8 deaths.
Mexico: City of Mexico, Aug. 21-28, 1 case, 4 deaths.
Russia: Moscow, Aug. 6-20, 15 cases, 2 deaths; St. Petersburg, Aug. 13-20, 1 case, 4 deaths; Warsaw, July 31-Aug. 6, 22 deaths.
Turkey: Alexandretta, Aug. 13-20, 3 deaths.

YELLOW FEVER.

Ecuador: Guayaquil, Aug. 8-15, 1 death.
Mexico: Aug. 27-Sept. 3, Coatzacoalcos, 4 cases, 1 death; Vera Cruz, 14 cases.

CHOLERA.

India: Bombay, Aug. 9-16, 33 deaths; Calcutta, Aug. 6-13, 4 deaths.

PLAGUE.

Africa: Cape Colony, July 23-30, 2 cases.
Brazil: Bahia, Aug. 5-18, 17 cases, 7 deaths.
Egypt: Aug. 6-13, 4 cases, 3 at Alexandria.
India: Bombay, Aug. 9-16, 44 deaths; Calcutta, Aug. 6-13, 3 deaths; Karachi, Aug. 7-14, 3 cases, 2 deaths.
Mauritius: June 17-July 7, 6 cases, 5 deaths.
Peru: Callao, Aug. 13, 1 case; Aug. 17, Colan, reported; La Sullana, reported; Sechura, reported; July 31-Aug. 6, Lima, 11 cases, 5 deaths; Salaverry, 2 cases, 1 death; Payta, 4 cases, 2 deaths.

Society Proceedings.

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Portland, Ore., July 11-14, 1905.

Medical Society of the State of Pennsylvania, Pittsburg, September 27-29.
Colorado State Medical Society, Denver, October 4-6.
Idaho State Medical Society, Lewiston, October, 6-7.
Tri-State Medical Society of Alabama, Georgia and Tennessee, Chattanooga, October 12-14.
Assn. of Military Surgeons of the U. S., St. Louis, October 10-15.
Mississippi Valley Medical Association, Cincinnati, October 11-13.
Vermont State Medical Society, Rutland, October 13-14.
New York State Medical Association, New York, October 17-20.
Medical Society of Virginia, Richmond, October 18-21.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Seventeenth Annual Meeting, held at St. Louis, Sept. 13-16, 1904.

Under the presidency of Dr. Walter B. Dorsett, St. Louis.

Addresses of welcome were delivered on behalf of the St. Louis Obstetrical and Gynecological Society by Dr. Louis E. Newman, and on behalf of the city and the exposition by David R. Francis, president of the Louisiana Purchase Exposition. The responses to these addresses of welcome were made by Dr. L. H. Dunning, Indianapolis, and Dr. Herman E. Hayd, Buffalo, N. Y. The meeting was very well attended. The papers were of a high scientific character and the discussions on them full and spirited. The association held only one session a day, in the morning, thus giving the members and their guests an opportunity to visit the exposition in the afternoons and evenings.

Officers for the Ensuing Year.

The following officers were elected for the ensuing year: President, Dr. H. W. Longyear, Detroit; vice-presidents, Dr. D. Tod Gilliam, Columbus, Ohio, and Dr. John Young Brown, St. Louis; secretary, Dr. William Warren Potter, Buffalo, N. Y. (re-elected); treasurer, Dr. X. O. Werder, Pittsburg (re-elected).

The association will meet in New York City in 1905.

(To be continued.)

AMERICAN ROENTGEN RAY SOCIETY.

Fifth Annual Meeting, held in the Louisiana Building, St. Louis, Sept. 9-13, 1904.

The President, Dr. James B. Bullitt, in the Chair.

Election of New Officers.

The following officers were elected: President, Charles Lester Leonard, Philadelphia; vice-presidents, Weston A. Price, Cleveland; Henry Hulst, Grand Rapids, Mich.; Gordon G. Burdick, Chicago; secretary, Russell H. Boggs, Pittsburg; treasurer, Leavitt E. Custer, Dayton, O.; member of the executive committee, George C. Johnston, Pittsburg. The following committees, to be appointed later by the president, were provided for: Committee on Histologic, Physiologic and Bacteriologic Influence of the *X*-Ray, Committee on Technic of Radiotherapy, Committee on Technic of Radiography. The constitution was amended to provide for a Board of Censors, said board to consist of the three last presidents, Drs. George P. Girdwood, Montreal, Canada; A. W. Goodspeed, Philadelphia, and James B. Bullitt, Louisville, Ky. The place of next meeting will be either Detroit or Cleveland, to be determined later by the Executive Committee.

The election of officers was followed by the president's address.

Comparison of X-Ray and Surgical Treatment for Tuberculosis.

DR. BULLITT put two propositions: 1. Is the present surgical treatment of the forms of tuberculosis imminently and entirely successful and satisfactory? 2. What is the probability that the Röntgen ray method of treatment is capable of rendering the treatment of such diseases more rapid and successful? He made inquiry of various operators as to results obtained in the treatment of tuberculosis of long and flat bones, joint structures, tendon sheaths, peritoneum, testicle and lymph glands. No mention was made of the length of time that elapsed between the beginning and the end of the treatment, number of exposures made, conditions of the exposures and technic; nor is it stated that some cases get worse rather than better under the *x*-ray treatment. A possible mortality from *x*-ray treatment is out of the question. The reports indicate that in some cases at least the tuberculous process can be cut short by exposure to the *x*-ray, that a cure can be affected in much shorter time, and, in diseases of the bones and joints, with much better functional results than is to be expected from the usual surgical methods. The Röntgen ray, says the author, is not to be regarded as a perfect method of treatment in tuberculous disease, but may be considered to be of great value. The following summary is presented: Long and flat bones—Cases treated, 71; cured, 33 per cent.; improved, 35 per cent.; not benefited, 29 per cent. Joints—Cases treated, 141; cured, 38 per cent.; improved, 37 per cent.; not benefited, 25 per cent. Tendon sheaths—Cases treated, 27; cured, 70 per cent.; improved, 22 per cent.; not benefited, 0.7 per cent. Peritoneum—Cases treated, 32; cured, 40 per cent.; improved, 25 per cent.; not benefited, 35 per cent. Testicle—Cases treated, 21; cured, 33 per cent.; improved, 48 per cent.; not benefited, 19 per cent. Lymph glands—Cases treated, 226; cured, 35 per cent.; improved, 40 per cent.; not benefited, 25 per cent. Lupus—Cases treated, 616; cured, 68 per cent.; improved, 24 per cent.; not benefited, 8 per cent.

This was followed by a symposium on *x*-ray in tuberculosis.

The X-Ray in Tuberculosis and Malignant Diseases.

DR. J. D. GIBSON, Denver, Colo., said that for the treatment of deep-seated growths a light made by a powerful machine and capable of great penetration is required.

The X-Ray in the Treatment of Pulmonary Tuberculosis.

DR. EMIL GRUBBE, Chicago, has found that the *x*-ray is particularly valuable in the acute cases, in which prominent symptoms are loss of appetite, weight and strength, slight rise of temperature, cough and expectoration, but no hemorrhage; and in chronic cases, and that the sooner the treatment is begun the better.

The Roentgen Ray in the Treatment of Tuberculosis.

DR. J. RUDIS-JICINSKY, Cedar Rapids, Iowa, insists on an early diagnosis and plenty of fresh air and sunshine as adjuvants of the *x*-ray treatment of tuberculosis. He uses a tube which has a prolongation from the middle of the *x*-ray field proper made of lead glass except the end where the rays emanate, which must be flint glass, enabling the rays to emerge at this point, which is laid right against the lesion.

The remainder of the tube is enclosed in a special shield. This does not endanger the patient, and only the diseased area is rayed. Since December, 1902, he has treated 20 cases; 5 were of the hemorrhagic variety and improved in ten weeks and are still doing well; 10 cases were of the fibroid variety, and 3 of them died after six weeks, 2 as the result of intestinal complications and 1 from tubercular meningitis; the remaining 4 are slowly yielding to treatment; 2 cases of mixed infection are gaining steadily in weight. Of 6 cases of tuberculosis of the peritoneum, 1 died, and the other 5 are well and have not had a recurrence. Of 19 cases of lupus, 16 are apparently cured, and in 3 the treatment was negative. In glandular tuberculosis, 8 cases are cured, 6 are benefited, 19 are failures and 4 cases are still under treatment and doing well. In tubercular laryngitis he uses the ray as a prophylactic measure only, and 2 cases out of the 8 seemed benefited. Eight cases of joint tuberculosis were cured in six weeks; 4 chronic cases were benefited in four months; 2 cases of tuberculosis of the testicle were cured and have not recurred in three months.

The X-Ray in Tubercular Adenitis.

DR. MAY CUSHMAN RICE, Chicago, reported a case of tubercular adenitis in a girl aged 18, who had been operated on five times, the disease recurring again. *X*-ray treatments were then given three times a week, ten-minute exposures, with a medium vacuum tube, tube distance three inches. After the third treatment the glands began to diminish in size, and at the end of two months the largest gland was about the size of a bean. There was a corresponding increase in weight and improvement in general health. The second case, a woman, aged 32, disease of five years standing, was treated with the high-frequency current by means of the Tesla coil and static machine, with only slight improvement. The *x*-ray was substituted, and after five months the glands could scarcely be felt.

DISCUSSION.

DR. G. G. BURDICK, Chicago, emphasized the importance of not restricting the treatment of tuberculosis to the *x*-ray, but to look on the *x*-ray as a most valuable agent when used with other remedial agents.

DR. GEORGE E. PFAHLER, Philadelphia, suggested that a great many cases of tuberculosis get well without ever seeing a doctor and without ever knowing that they had tuberculosis, a fact of which we must not lose sight when we draw conclusions as to the efficacy of the *x*-rays in the treatment of tuberculosis. He has had very gratifying results from the use of the *x*-ray in the treatment of all forms of tuberculosis. In treating tubercular glands, especially those of the neck, we should also expose the lung, because most of these cases have some involvement of this organ. He never protects anything except the hair and face of the patient.

DR. C. L. LEONARD, Philadelphia, said that in using the *x*-ray we must be governed by a dosage which is known and can be measured, and that on this will depend the results that are obtained. Its action in tuberculosis is that of an alterative and a stimulant, but we must not depend on that agent alone.

DR. E. G. WILLIAMS, Richmond, Va., emphasized the fact that all his patients had improved in general health under the *x*-ray treatment. One case gained 70 pounds in nine months. The *x*-ray stimulates metabolism more than any other agent.

DR. HENRY HULST, Grand Rapids, Mich., has had good results in the treatment of tuberculosis of glands, joints and peritoneum. He has never used it in pulmonary tuberculosis because a perusal of the literature has convinced him that when the *x*-ray is used critically no good results are obtained.

DR. S. TOUSEY, New York City, reported a wonderful improvement in a case of tuberculosis of the larynx, using the method advocated by Dr. Rudis-Jicinsky. In four months the ulcerations had healed almost entirely. He also reported considerable improvement in a case of tuberculosis of the prostate gland which was treated by raying the abdomen and by letting the rays shine into the rectum through a specially constructed tube.

DR. C. E. SKINNER, New Haven, Conn., used the *x*-ray in three cases of advanced pulmonary tuberculosis, but was unable to perceive any influence whatever in any of the cases.

DR. GEORGE C. JOHNSTON, Pittsburg, reported similar results. His experience leads him to prefer climatic to *x*-ray treatment. The treatment of tuberculosis under ordinary climatic conditions by means of the *x*-ray alone is a failure.

This was followed by a symposium on the treatment of malignant diseases.

The Treatment of Epithelioma.

DR. GEORGE C. JOHNSTON, Pittsburg, divides his cases, first, those in which, owing to location, extent, metastasis, condition of the patient, and various other factors, a cure can not be expected, and, therefore, treatment is purely symptomatic; second, those cases in which the location and other conditions are such as to permit of the expectation of a cure. He gives daily treatments for the first ten days, unless an undesirable degree of reaction occurs, when the treatments are given at longer intervals. After the first ten days treatments are given every third day until the desired results are obtained. If the results do not appear, the dose may be increased cautiously, bearing in mind the cumulative tendency of the agent employed. The degree of success obtained will be in direct proportion to the experience of the operator, the correctness of his technic, his familiarity with the apparatus used and his ability to distinguish an active from a worthless tube. He reported 44 cases of epithelioma about the face. The average duration of these cases is four years and eight months; 34 were primary and 10 recurrent cases. The average number of treatments in each case was 22. Metastasis occurred in only 3 cases; 30 cases were cured, 8 were benefited, 3 recurred, and 3 died.

Radiotherapeutic Nihilism.

DR. G. G. BURDICK, Chicago, insists on the importance of having a reliable technic which can be followed by unskilled as well as by skilled operators. He proposes the following: In lupus and other forms of local tubercular involvement, the tube distance should be four inches and the penetration regulated to within half an inch in order to take advantage of the ray of low velocity, which resembles the cathode ray. In carcinoma and epithelioma the tube distance should be ten inches and the penetration calculated to reach the center of the growth, producing irritation at least twice, and then increasing the degree of penetration to a high velocity, in order to get cellular degeneration. Sarcoma requires a very high degree of penetration, depending on the density of the growth. When it is desired to take advantage of the tonic effect of the ray a high tube should be used. Where the lethal effect is desired a low tube should be used. It must be remembered that the tonic action of the ray is due to its fluorescence, this being understood as a form of motion, and that the lethal effects are the result of chemical radiations. All carcinomata which have not ulcerated should be rayed thoroughly before they are removed by operation.

The X-Ray Treatment of Sarcoma.

DR. JOSEPH F. SMITH, Chicago, reported 18 cases of deep-seated sarcoma in various organs and tissues in which *x*-ray proved a most severe disappointment.

The Results of Treatment of Carcinoma.

DR. J. N. SCOTT, Kansas City, Mo., said that one great advantage of the *x*-ray is that it can be applied to large areas and to vital organs, if used with care. One disadvantage is the long period of time over which the treatment must be extended. All tumors operated on and found to be malignant should have a course of *x*-ray treatment, and if at the end of from one to three months no recurrence has set in the patient may be considered as cured, but should be kept under observation.

Carcinoma of the Breast.

DR. CHARLES L. LEONARD, Philadelphia, said that the essential factor of any successful treatment of malignant disease is that it be radical and used early, its severity to be limited only by the patient's general vitality and of the normal tissues that surround the affected area. Thorough surgical treatment,

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wherever consistent with the preservation of the function of life of the area involved should be advocated as the primary treatment. If any aid is to be expected from Röntgen ray treatment it must be commenced immediately after the surgical operation, before the patient is out of bed. The healing of wounds and the closing of sinuses are hastened by Röntgen ray treatment. A careful study of the results obtained by this treatment in malignant disease of the breast shows that it has been most affected where it supplements rather than supplants operation. In inoperable and hopeless cases it affords relief from intolerable symptoms, lengthens life and offers the patient the most. The best results are obtained in scirrhus; in fact, the only favorable results of primary treatment have been obtained in these cases. Metastasis can be influenced and held in check by the Röntgen ray treatment. In all other cases surgical removal of the breast and the adjacent lymph glands is always indicated. Technic and experience, as well as local and constitutional treatment, are essential to success in the treatment of malignant disease of the breast. He reported 26 cases treated since 1900. Of this number, 12 are dead, 2 have not been heard from, and the remainder are living. Two had preparatory treatment, and they have lived eighteen and sixteen months respectively. One had a primary inoperable scirrhus; 4 had recurrences, in 3 the recurrence has disappeared entirely and has not recurred in twenty-one, ten and four months respectively. In 1, massive recurrence followed immediately after operation. Of the cases receiving post-operative *x*-ray treatment, 4 are living and are free from recurrence, nineteen, fourteen, twelve and seven months after operation. Of the 12 patients who died, all except 3 were benefited when first seen. Two of them had post-operative treatment, but died eighteen months after the operation. He considers the results very encouraging and urges further study and observation in the treatment of malignant disease of the breast with the *x*-ray.

Variations of Radiotherapeutic Technic.

DR. RUSSELL H. BOGGS, Pittsburg, advocated the employment of more accurate methods and suggested that some perfect results that are reported in the treatment of tuberculosis or malignant disease may be due to the perfect technic employed by the operator or to a wrong diagnosis. He insisted that the most important point is the tube distance, because the intensity of the light varies inversely as the square of the distance. For skin lesions there is no occasion to place the tube more than from 4 to 6 inches from the skin, but that is not the case in the treatment of deep-seated lesions. Another important point is that the *x*-ray should be of large volume when deep lesions are to be treated. A low-vacuum tube at a distance of from 12 to 16 inches will penetrate the tissues effectively. With reference to cancerous disease, he spoke of cases of small epitheliomata situated on the face, which can be cured in from 6 to 8 weeks, depending on the vitality of the patient. In cases in which the disease appears to be localized, the tumor should be removed at once and followed up by *x*-ray treatment. Cases having considerable glandular involvement should be treated for a time with the *x*-ray, then operated on, and treated again with the *x*-ray. Usually, twenty treatments before and twenty after operation are all that are required. Those cases that are considered inoperable should be treated by the *x*-ray because of its inhibitory action on the disease and for the comfort it affords the patient. All cases should be given tonic treatment as well. Alcoholics, syphilitics and anemic patients in general do not, as a rule, improve rapidly. Such cases should receive individual specific medication in addition to the *x*-ray treatment.

Cases of malignant disease were reported by the following: George C. Johnston, C. L. Leonard, J. F. Smith, J. N. Scott, G. G. Burdick, R. H. Boggs, W. W. Johnson, M. K. Kassabian, G. E. Pfahler and E. G. Williams.

The Compression Tube in Skiagraphy of Calculi.

DR. HENRY HULST, Grand Rapids, reported the good results he has obtained from the use of his compression tube, a modification of the Albers-Schoenberg *"compressions-blende,"* in skiagraphy of fat people.

The Interpretation of Radiographs of the Chest.

DR. P. M. HICKEY, Detroit, Mich., said that in order to secure the best results perfect mastery of the tube and employment of stationary secondary current and the use of developers which will secure the greatest detail and contrast are necessary. It is also necessary that the observer should be experienced in the reading of these negatives. The exposure should be made as rapidly as possible with a view to securing the greatest amount of contrast. To interpret these negatives we should know the position of the target of the tube with reference to the area exposed, and a suitable illumination of the negative by means of the illuminating box is essential. Furthermore, careful distinction should be made between physiologic and pathologic conditions, such as a large or vigorously pulsating aorta and an aneurism of the aorta.

The X-Ray in Injuries Near the Wrist.

MR. M. WILBERT, Philadelphia, called attention to the fact that fractures of the lower end of the radius are frequently complicated by other more or less extensive injuries, and that the other bones entering into the formation of the wrist joint are also subject to fracture. Fractures at or near the wrist joint are extremely common and vary considerably, both in location and direction, and in the nature and extent of the injuries to other structures. Of the 26,011 cases of fracture rayed by him, 660 were at or near the wrist joint. When skiagraphing a joint it is important to include as much of the surrounding tissues as possible so that any fractures near the joint may be detected. In fracture of the wrist joint, fracture of the carpal bone is very common.

The Value of Stereoscopic Skiagraphy.

DR. M. K. KASSABIAN, Philadelphia, discussed this subject and exhibited an apparatus which is used for stereoscopic examination.

Diagnosis of Brain Tumors and Softening.

DR. GEORGE E. PFAHLER, Philadelphia, exhibited a series of skiagraphs made for the purpose of diagnosing and locating brain tumors and abscesses of the brain. He said that he would never take the responsibility of an operation on the brain purely on skiagraphic evidence. On the other hand, all cases of brain lesion should be examined by the *x*-ray in order to confirm or add to the clinical evidence.

Therapeutics.

[Our readers are invited to send favorite prescriptions or outlines of treatment, such as have been tried and found useful, for publication in these columns. The writer's name must be attached, but it will be published or omitted as he may prefer. It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in everyday practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Heart Disease.

DIET.

Schott, in the *Lancet*, discusses the diet in heart affections, and gives the following two rules: 1. Patients must avoid everything which excites the action of the heart, and 2, they must shun everything which embarrasses the heart's action. The substances which most readily cause excitation of the heart are coffee, strong tea, and alcoholic liquors. These stimulants should be avoided, even in cases where there has been habitual use of them, except in cases where the withdrawal would result in collapse. In these cases, which have been accustomed to the use of alcohol, it is best to give Rhine wine, Moselle, or Bordeaux, which has been matured for from eight to ten years. If it is found necessary to administer other than the light wines, Cognac or whiskey mixed with plain water may be given. No aromatics should be given with the alcohol because of the danger of irritability of the stomach leading to

anorexia and insomnia. Water and milk are the beverages to be preferred. Cocoa deprived of its fat is good, but chocolate does not usually agree. If it is desired to give fats pure cream or cream mixed with milk may be given. To avoid embarrassment of the heart too hearty eating of foods which produce flatulence must de interdicted. They may prove harmful in three ways: 1. The diaphragm is pressed up against the lungs so that respiration is impeded and dyspnea results. 2. The diaphragm is pressed up against the heart, forcing it upward and outward so that its action is carried on with greatly increased effort. 3. Intraabdominal pressure is increased and the abdominal vessels are compressed. Therefore, all effervescing beverages, carbonated waters, champagne, or beer usually disagree with patients suffering from heart disease.

INTERVALS OF FEEDING.

On account of the necessity of avoiding overloading of the stomach, it is best that these patients should eat at three-hour intervals, and the last meal of the day should be taken from two to two and one-half hours before bedtime, otherwise there is danger of disturbed sleep.

KINDS OF FOOD.

Soups should be taken sparingly, chiefly because their nutritional value is too low in proportion to the bulk. A few tablespoonfuls only should be recommended. New bread and freshly baked cakes must be avoided. Toast and zwieback or crust of rolls may be allowed. Of the vegetables, those difficult of digestion and producing flatulence must be avoided, as beans, peas, lentils, sauerkraut, red cabbage, leeks, onions, garlic and celery. Potatoes, boiled or in form of purées, are to be preferred to the less digestible baked potatoes. Turnips and carrots may be eaten when young. Other fresh and easily digested vegetables can not be too highly recommended. Meats are allowable, but the following must be avoided: Eels, fat goose breasts, goose liver pies, rich sauces, mayonnaise on salmon, lobsters, or crabs; highly smoked or salted fish, because of the thirst they produce; fat ham, or bacon, sausages, goulasch; seasonings and spices, red and black pepper, nutmeg, mace, cinnamon and vanilla.

FRUITS.

Easily digestible stewed fruits are allowed because of their favorable action on the intestinal peristalsis. Raw fruits which have to be peeled are desirable. Grape stones should be removed before grapes are eaten. Raspberries, gooseberries, currants, billberries, cranberries, pineapples, walnuts and Brazil nuts are to be prohibited.

HOT AND COLD DRINKS.

Ice in any form, either as iced drinks, fruit ices, etc., is prone to cause gastrodynia, and may produce congestion of the liver. This should be kept in mind when ice is prescribed for vomiting.

GENERAL INSTRUCTIONS TO PATIENT.

A mixed diet of both meats and vegetables is to be given. Thorough mastication and ensalivation of all the food is as indispensable in affections of the heart as in diseases of the stomach. Of the use of tobacco the author states: "I always recommend patients suffering from heart disease either to give up smoking altogether or else to indulge in it most sparingly, and in the latter case to use very dry tobacco and a long mouthpiece or a pipe. A patient should always be informed that smoking is bad for his heart disease." Drinking at meal time should be restricted. Gentle exercise in the open air for a short time after meals is to be recommended. Each case should be studied and the treatment should be modified in correspondence with the symptoms.

TREATMENT OF CASES WITH ADEQUATE COMPENSATION.

Abram, in the *Lancet*, Aug. 6, 1904, gives the following suggestions for the treatment of various conditions under the following subdivisions:

When compensation is practically equal to the lesion, the author believes that the patient should be told of his trouble in order to obtain his intelligent co-operation in conducting his mode of living. He should be warned against excesses of all kinds, mental and physical. Exercise in moderation may be permitted, but never in competition. If cycling is indulged in care should be taken not to struggle against head winds or up hill. Moderation in the use of alcohol and tobacco must be enjoined; in fact, abstinence is advised. In this stage of a mitral stenosis if a hemoptysis occurs, the author uses a free saline purge with a dose of opium. If the patient is a woman and the lesion aortic she should be barred from marriage. Well compensated cases of mitral regurgitation often pass through pregnancy without trouble. Cases of mitral stenosis should be carefully watched during pregnancy. "Our advice should certainly be against marriage."

TREATMENT OF CASES WITH PAIN AND DYSPNEA ON EXERTION.

In this subdivision are cases in which palpitation, precordial pain, and dyspnea are manifest on exertion, and in a more advanced degree, some passive congestion, with its results in the kidney and liver. In aortic cases throbbing in the neck vessels, headache, and giddiness may be troublesome. Absolutely the best treatment is rest in bed for a week, with limitation of fluid and regulation of the diet and moderate purgation. In aortic cases bromid and iron give relief. General tonics, iron and strychnin, and small doses (two to three minims) of the tincture of digitalis, where rest can not be taken, will aid materially. If there are diseased arteries with high tension, a rigid milk diet and diuretics are indicated.

CASES WITH SIGNS AND SYMPTOMS OF FAILING HEART.

Such cases have to sit upright. Limitation of fluid is often serviceable. The bowels may be gently acted on. For insomnia and the maniacal states frequently seen in aortic disease, trional, sulphonal or paraldehyd are useful, but opium is "our sheet anchor." Of the use of digitalis in aortic cases the author says: "When we find thickened arteries and possibly some increase of tension there is no doubt that the best line of treatment is to limit the fluid taken, open the bowels, and give renal diuretics. If cardiac stimulants are used I prefer strophanthus. When the pulse tension is low digitalis is demanded, and also in cases where the mitral valve has yielded. Dyspnea is often relieved by the use of atropin and strychnin hypodermically. The 'sinking' sensation may be alleviated by the administration of solid opium or 'neat' brandy."

Chronic Colitis.

Shoup, in *Amer. Med.*, gives the following suggestions for the treatment of this condition:

1. He believes the cause to be due in a large measure to displacement of the abdominal organs and the consequent indigestion and its sequelæ; therefore, he replaces the organs and holds them in place by a properly fitted corset. It is the invention of a Paris physician, and has a long, straight front, coming well down over the hips, and as low as can be worn in front, and is held down to the hose by elastic fasteners. It is made to give firm pressure around the hips, and should be put on while the patient is lying down, and laced from below. It may be necessary to change the corset several times before it is suited to the individual case.

2. Make a chemical examination of the stomach contents and select a diet to suit the needs of the individual case. If hydrochloric acid is much diminished or absent, meats should be partially or wholly excluded in the beginning of the treatment. In cases with extreme constipation and passage of mucus, the diet of von Noorden, leaving a large residue and consisting of graham, whole wheat, or corn breads, spinach, cabbage, lettuce, asparagus, cresses, etc., has given the best results. The explanation offered is that a bulky meal passes more quickly out of the stomach and through the intestine and overcomes the constipation, which is a most troublesome symptom. If diarrhea is present the diet should be milk, broths, gelatin, eggs, custards, and peptones. If the patient is nervous, a rest of two hours after the main meal should be insisted on. When patients are thin, fats are indicated, and of these butter, cream and olive oil are to be preferred. The olive oil may be given before breakfast, and in some cases before other meals as well.

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3. Assist digestion by the administration of hydrochloric acid and some one of the digestive ferments, such as pancreatin, papain, and diastase and bitter tonics, such as gentian or nux vomica. Allay fermentation by the use of intestinal antiseptics, such as salol, resorcin, and creasote.

4. Keep the bowels open by the use of oils by mouth; when the diet and olive oil fail castor oil is the best remedy to use. Salines are not effective. Massage of the colon is also useful.

5. Local treatment should consist of high enemas of alkaline solutions, followed by an astringent, such as krameria or silver nitrate. Large enemas of olive oil should be given while the patient is in the recumbent position, and allowed to flow by gravitation high up into the colon; they are soothing, healing and lessen constipation.

6. See that the patient gets sufficient rest in the recumbent position, and when practical, a change of air, at the mountains or seashore.

7. Treat the attack of pain which precedes the passage of mucus by a hypodermic of morphin and atropin, and promote evacuation of the bowels by the method mentioned above.

Urticaria.

Van Harlingen recommends the following:

℞.	Magnesii sulphatis	ʒi	30
	Ferri sulphatis	gr. iv	25
	Sodii chloridi	ʒss	2
	Acidi sulphurici dil.	ʒii	8
	Infus. quassiæ q. s. ad	ʒiv	120

M. Sig.: Tablespoonful in glassful of water before breakfast.

Duhring recommends the following for local use:

℞.	Acidi carbolici	ʒiss	6
	Glycerini	ʒii	8
	Spiritus vini rect.		
	Aquæ amygdalæ amaræ, āā	ʒviii	240

M. Sig.: Apply locally two or three times daily to relieve itching and burning.

The following is recommended for use in neurotic subjects:

℞.	Liquoris potass. arsenitis	m. xxiv	1 60
	Potassii bromidi		
	Syrupi aurantii corti, āā	ʒiv	16
	Aquæ dest. q. s. ad	ʒiii	90

M. Sig.: Teaspoonful three times a day.

Medicolegal.

Insane Delusion Defined.—The Court of Chancery of New Jersey holds, in the case of Davenport vs. Davenport, that an insane delusion is a fixed belief based on supposed facts which exist only in the diseased imagination of the deluded person, persisted in against indisputable evidence of its falsity. A mistaken conclusion, arrived at on consideration of existing facts, is not an insane delusion, although the facts may not justify the conclusion.

Indecent Physical Examinations.—The Supreme Court of Iowa says that the case of Garvik vs. the B., C. R. & N. Railway Company was tried as if the charge was rape, by an employe of the company, and that counsel for the company asked that the jury go into a room and examine the man, who consented that it be done. The Supreme Court does not think that the examination by the jury should have been permitted. It says that there was no showing that the private parts were in the same condition as they were when the assault was said to have been committed. Moreover, the ultimate question was not the exact condition of this member, but whether or not the owner was physically incapacitated from having sexual intercourse. The court doubts if this could be determined by a non-expert from a mere examination of the penis. Again, it says, the examination was indecent and should not have been tolerated. Wounds resulting from injuries may undoubtedly be exhibited in open court to the jury, but even here no indecent exposures should be made. Furthermore, the evidence was not demonstrative in character. The court adds that it has found no authority which justified the ruling made by the trial court, and that it doubts if there is any to be found in the books. Be it remembered, it continues, that the plaintiff was entitled to be present during the entire trial with her counsel, and that there were others aside from the witness (employe) who were entitled to be present at the examination of his private parts. "Let it be said, once for all, that we can not lend our support to such a shocking and indecent performance as was permitted in this case."

What Are Included in Privileged Communications.—Section 4,608 of the Iowa Code contains the provision: "No practicing . . . physician . . . who obtains such information by reason of his employment . . . shall be allowed, in giving testimony, to disclose any confidential communication properly entrusted to him in his professional capacity, and necessary and proper to enable him to discharge the functions of his office according to the usual course of practice." The Supreme Court of Iowa says, in the personal injury case of Battis vs. C. R. I. & P. Railway Company, that all will agree that the manifest purpose of this statute is to make it possible for every person to fully and freely consult with a physician, or submit himself to the examination of such physician, without anticipation or fear that the confidence reposed may be broken in on by a subsequent examination of the physician as a witness in some form of legal proceeding. This being true, the statute should have a liberal construction by the courts. Accordingly this court has held that the expression "confidential communications," as used in the statute, is not to be restricted to the mere verbal statements made by the patient, but must be construed to include all knowledge or information acquired by the physician through his own observation or examination. In the case at bar the interrogatories propounded to the physician were intended to elicit from him certain facts respecting the condition of the plaintiff, and it was manifest that whatever knowledge the witness possessed was acquired from the statements made to him by the plaintiff, and from his own examination and observation. Clearly in such a case the statute applies, and the privilege may be insisted on. Nor is the privilege taken away, as contended for, by the fact that while on the witness stand, and elsewhere, the plaintiff had stated that he was unconscious when taken to, and while he remained in, the office of the physician, and that the testimony sought to be elicited had relation solely to the condition of the plaintiff as to consciousness, the purpose thereof being the impeachment of the plaintiff as a witness. It may be true, possibly, that the knowledge acquired by the physician was not, in point of fact, and strictly speaking, necessary and proper to enable him to perform the functions of his office. But of this the court is not in position to judge, nor is it called on to determine what the fact might be when reduced to a last analysis. It was the condition of the plaintiff that was the subject of the inquiry, and it was the professional judgment of the physician that was called for. The privilege can not be subject to measurement by metes and bounds, and the court may well assume that all that was told to the physician, and all that was developed by his examination or came under his observation, was necessary and proper for his understanding of the condition of his patient. The relation of physician and patient being established, if by any fair intendment communications made have relation to the physical or mental condition of the patient, the court is bound to hold them privileged. With reference to the local surgeon of the company, called by the station agent to see the plaintiff, the court says that it may be conceded that the sole purpose of the agent in calling this physician was that the latter might ascertain the condition of the plaintiff, and thus be prepared to advise the company should occasion therefor arise, or be a witness on its behalf if necessary. Certainly, if the visit of the physician had been confined to the limits incident to such purpose alone, his eligibility as a witness on behalf of the company might not be open to question. Without doubt a railway company with the utmost propriety may thus advise itself of the fact of injury and the character and extent thereof, in anticipation of a possible claim against it for damages. And with that end in view it may send a physician to inspect and take notes, or

otherwise inform himself of existing conditions. But this can avail the company nothing unless the physician shall strictly retain his character as an employe of the company. If, on request or on his own motion, he assumes to advise or administer treatment to the patient, and the latter in any manner acquiesces therein, the physician thereby casts aside his relation as an employe of the company and transfers his allegiance to the patient. In such instances a case is presented where one can not serve two masters at one and the same time. The allegiance of the physician must be wholly on one side or the other. It matters not, in this connection, who calls him in the first instance or who pays him. He may present himself at the side of the patient on his own motion, and he may not expect, or in fact receive, pay. If the physician assumes to advise or treat he should be put in possession of all facts necessary or material to enable him to do so properly. If the patient acquiesce, he should have the right to, and should, communicate freely and fully, without fear of exposure or of having his confidence made common property. It was to this end that the statute was enacted, and manifestly the purpose thereof may not be frustrated by proof that, at the time of rendering professional service, the physician was under control of employment to serve the interest of the person or company subsequently charged with responsibility for the identical injury he is called on or assumes to treat.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

September 10.

1 *The Nature of the Indications for Operation for Fibroid Tumors of the Uterus. Charles P. Noble.
2 *On the Pathogenesis of Chronic Gastric Ulcer. W. G. MacCallum.
3 *Recent Experimental Work on Anesthesia. Torald Sollmann.
4 *Early Recognition and Treatment of Intestinal Obstruction. Andrew S. Lobingier.
5 Rôle of the General Practitioner in the Prevention of Pulmonary Tuberculosis. F. M. Pottenger.
6 *The Principles of the Preservation of Food. Geo. Richter.
7 The Advertising Specialist. Fred D. Lewis.
8 Sea Versus Land Burial. Thomas R. Evans.

1.—See abstract in THE JOURNAL, xlii, p. 1585.

2. **Pathogenesis of Chronic Gastric Ulcer.**—MacCallum says that gastric ulcers may be produced by anything which causes necrosis of the mucosa of the stomach, and thus subjects it to the digestive action of the gastric juice. In some cases the inception is very obscure. The persistence of some of these ulcers offers the greatest difficulty of explanation. It is probably true that all gastric ulcers tend to heal, but frequently they last a long time because new ulceration occurs in the same spot.

3. **Anesthesia.**—Sollmann considers the following anesthetics: Chloroform, ethyl chlorid, ethyl bromid, gaseous anesthetics, petroleum ether, scopolamin-morphin, cocain-adrenalin, anesthesin, and yohimbin, describing their action and dosage.

4. **Intestinal Obstruction.**—Lobingier emphasizes the fact that the treatment of true intestinal obstruction is immediately and at all times surgical. Late operative interference, due to late diagnosis or to procrastination, is the principal cause of the mortality. A preliminary gastric lavage will do much to quiet and rest the patient when vomiting is an early and depressing symptom. But the deceptive tranquility, which it sometimes brings, should not allay the fears of the attendant or induce him to believe that his first diagnosis was wrong. Efforts to straighten out volvulus and intussusception by hydrostatic pressure must be made early and with great care, but that is doubtful surgery, and many a life has been lost from rupture and peritonitis when the manipulations were violent or continued until the intestine was gangrenous. If the patient is seen early, before serious necrosis occurs, simple release of the constricting band will often suffice. If destructive changes have occurred, and if the patient is very weak and unable to stand prolonged anesthesia, a primary enterotomy should be done, to be followed by an anastomosis as soon as the patient is sufficiently convalescent. If the patient is sufficiently strong, immediate exsection of the gangrenous segment and anastomosis are indicated. Early diagnosis is, of course, necessary. The symptoms which appear early and on which the diagnosis depends, are obstipation; vomiting, persisting more than fifty hours; pain, more or less severe and constant; shock or collapse; meteorism, of localized character; normal or subnormal temperature; a small rapid pulse and a leucocytosis between 15,000 and 20,000, with a strong reaction of indicanuria, if taken before the third day, and if the ileum is involved.

6. **Preservation of Food.**—Richter considers the preservation of food by drying, freezing, sterilization and the action of chemicals. He has devoted considerable time to the study of the preservation of artificial foods, and has worked out a method which he claims has yielded favorable results. It is well known that gelatin, prepared by the hot extraction of bone and cartilage is a digestible proteid, forming no mean part of our regular diet. Dried gelatin, even if contained in open packages, is not subject to decomposition, but remains unchanged for any length of time. As a jelly, it soon becomes putrid. Gelatin, if prepared in very thin films, will take up moisture from the atmosphere according to the dew-point. Richter has made practical use of this by constructing a self-registering psychrometer and to preserve food, especially native albumins. His process demands that the material to be preserved should be in solution. For instance, the juice pressed out of raw meat, or a beef soup, containing all the necessary condiments, or strong tea or coffee or ox-gall, is mixed with about 1 per cent. of primary gelatin (commercial gelatin can not be used for the purpose on account of its glue-like taste). After cooling, a jelly forms. This is cut into thin films and dried in a cold-air current until it becomes brittle. The leaves are then converted into a fine powder, which will keep indefinitely. If not packed airtight it will take up moisture, but not enough for decomposition to set in. It may eventually cake, but the cake is brittle. Insects find the dry substance too hard for their uses. The powder is instantaneously soluble in luke-warm water. To insure the absence of septic or other organisms, the dry powder is heated to about 100 C. before packing, or in the package. Whole milk can not be preserved on this principle as oxygen can not be excluded. After a while, the powdered milk turns sour and exhibits a taste and smell of cheese. Egg-gelatin powder has excellent keeping qualities for about ten months, when its solubility becomes less, though it remains perfectly digestible. These preparations are not on the market nor are they likely to be manufactured for the present.

New York Medical Journal.

September 10.

9 *The Treatment Following the Bloodless Reduction of Congenital Hip Dislocation. Dexter D. Ashley and Frederick Mueller.
10 The Present Condition of Tenontoplasty. (To be continued.) Professor Vulpius.
11 Treatment of Mucomembranous Colitis by Colostomy. John M. Elder.
12 *What Can Be Done to Check the Progress of the Age Degenerations? Bradford C. Loveland.
13 *Influenza or Acute Articular Rheumatism? Their Diagnosis, with a Report of My Own Illness. Max Talmey.
14 *Treatment of Status Epilepticus, with Report of Two Cases. Annie M. Tremaine.
15 *Immediate Repair of Injuries of the Pelvic Floor. H. C. Coe.
16 Case Presenting Unusual Difficulties in Diagnosis. (Cholecystitis Simulating Appendicitis.) Walter G. Elmer.
17 Large Fibroids of Uterus Complicating Pregnancy; Porro Operation. William C. Wood.

9. **After-Treatment of Congenital Hip Dislocation.**—Ashley and Mueller consider the after-treatment of unilateral and bilateral congenital dislocations of the hip of group B, that have been corrected by the bloodless reduction method. Their method is that advocated by Lorenz.

12. **How to Check the Age Degenerations.**—Loveland considers those changes in the arteries and smaller arterioles or capillaries incident to advancing years, and imperfect elimination or the gouty habit, in which the walls become thickened,

stiffened, harder than normal, and later pass through the calcareous or atheromatous degeneration. Many conditions are dependent on these changes as a fundamental cause, and a considerable majority of all deaths occurring after middle life may be charged to the account of degenerated arteries. All the causes, save two, nephritis and old age, are removable. Hence, says Loveland, it is logical to suppose that after a removal of the cause the disease should be stayed in its progress. He reports three cases, in which he followed a definite method of treatment, which point to the fact not only that there was a limiting of the process, but from the relief of certain symptoms, it would seem that, in some degree at least, an improved circulation in the parts supplied by the diseased blood vessels would indicate a certain amount of restoration in the diseased territory. This improved circulation and nourishment might result from the absorption of thickenings which had narrowed the lumen of the vessels, or a bettered circulation, with more dilated arterioles and capillaries, affecting to some degree the hardened and thickened vessels with the rest, thereby allowing the passage of more blood. Two of the cases were diagnosed as arteriosclerosis affecting the cerebral circulation. The third case involved the coronary arteries. The treatment of one case consisted of a definitely prescribed diet, cool bathing, and moderate exercise, strychnin, 1/30 gr., and mercury protoiodid, 1/6 gr., three times a day. In the treatment of the second case electricity and sodium phosphate each morning, and 5 gr. each of sodium salicylate and sodium benzoate, in a large glass of water, three times a day, were added. The results in the three cases were excellent, but the author does not believe that the patients referred to will not die from some disease dependent on arterial degeneration. Yet, it seems natural that the mode of living, which will result in so much improvement, if persistently adhered to, should leave the patients to be taken off by some acute disease or to "burn out" with old age.

13. Differential Diagnosis of Influenza and Acute Articular Rheumatism.—Talmey cites his own case and questions the diagnosis of acute articular rheumatism made by a brother physician. He bases his contention principally on his family history and his personal history. He terms the disease with which he suffers, and which involves the muscular attachment around the joints, "rheumatoid" influenza.

14. Treatment of Status Epilepticus.—Tremaine reports two cases in which she used intravenous saline injections with benefit, hence concludes that in this solution we have a valuable remedy for the treatment of status epilepticus.

15. Immediate Repair of Injuries of the Pelvic Floor.—Coe emphasizes his belief that by careful attention to these lesions immediately after labor the patient can be spared the necessity of subsequent operations for pelvic floor lacerations, prolapsus, etc. He says that the modern accoucheur must be a thoroughly trained gynecic surgeon, who not only recognizes the true lesion at the time of its occurrence, but looks into the future and sees the patient's condition months after the injury.

Medical News, New York.

September 10.

18 *An Analytical Study of Twenty-eight Cases of Arthritis, with Special Reference to Gout and Its Treatment. Charles C. Ransom.
19 Contribution to the Pathology and Treatment of Acute Gonorrhea. (To be continued.) Ludwig Weiss.
20 Recent Advances in the Therapeutics of Pediatrics. Noble P. Barnes.
21 Hereditary Chorea in Eighteen Members of a Family, with a Report of Three Cases. Malcolm Mackay.
22 Influenza in Children. Kenneth E. Kellogg.
23 Report of a Case of Addison's Disease Treated by Means of Suprarenal Extract and Adrenalin Chlorid. Douglas Symmers.
24 The Gastro-Intestinal Crisis of Erythema Exudativum; Simulating Appendicitis. A. M. Pond.

18. Arthritis and Its Treatment.—Ramson reports 28 cases of arthritis, 12 of which (43 per cent.) were gout. The diagnosis is unquestioned, therefore it is interesting to note the relative frequency of gout. Five of these 12 cases were acute gout, while the other 7 were of the chronic type of the disease. Of the other 16 cases 5 were cases of rheumatic arthritis, 4 acute and 1 chronic; 5 cases of gonorrheal arthritis, 1 septic arthritis, 1 arthritis deformans and 2 cases of erythromelalgia. The cases of acute gout were put on a milk diet, the joints were painted with a mixture composed of oil of gaultheria, 1 dram; ichthyol, 1 ounce, and then wrapped in cotton wool, oiled silk and a roller bandage. Colchicin, 1/100 of a grain, was given every two hours, and, as a rule, could be repeated at two-hour intervals for forty-eight hours. After the acute symptoms had subsided the drug was continued at intervals of four hours until the patient was discharged. In the chronic cases the same method was employed in the case of inflamed joints. Stiff joints were massaged and given passive movements and the patients directed to use the joints as much as possible—a very important factor in the treatment. To affect his purpose Ramson employed an apparatus which he calls a "teeter," consisting of a piece of board twenty-one inches long and eight inches wide. About three inches from the lower end another piece of board about ten inches long is fastened at right angles to the first piece by means of a bracket. On the shelf so formed the foot of the affected leg is placed, the longer board being in contact with the posterior aspect of the leg. The patient, seated in a rocking chair, rocks to and fro, thereby producing a greater or less amount of motion in the knee and ankle joints. It is an advantage over walking, as it not only keeps the weight of the body off the knees, but compels a much greater angle of motion. The apparatus eliminates muscular rigidity and the movements of the joints are limited only by the actual structural changes, which are gradually overcome by persistent use of the "teeter." He also favors the use of colchicum in chronic gout. The ichthyol bath is another measure which he has found useful in chronic cases. An ounce of ichthyol is put into a tub of water. The water is fixed at a temperature of from 98 to 100 F., and the patient remains in the bath for from ten to twelve minutes. The effect of the bath is the immediate relief of stiffness and soreness, which often lasts for forty-eight hours; succeeding baths give longer periods of relief. It is a good plan to precede the massage and movements of the joints by such baths, as there will then be much more freedom of movement and less soreness on manipulating. Good food and tonics are, of course, essential.

Boston Medical and Surgical Journal.

September 8.

25 *What Shall We Do with Patients Having Pulmonary Tuberculosis? Frederick I. Knight.
26 *The Interrelation of Medicine and Surgery in the Treatment of Gastric Ulcer. Hugh Cabot and George S. C. Badger.
27 Spindle-cell Sarcoma of Foot, Amputation. Recovery. Lung Metastases. Death. Autopsy. Charles L. Scudder.

25. Pulmonary Tuberculosis.—Knight's paper is a discussion of the present treatment of tuberculosis by means of fresh air, diet and rest.

26. Gastric Ulcer.—The indications for the medical and surgical treatment of gastric ulcer are discussed by Cabot and Badger. In acute bleeding ulcer operation is to be advised: 1. After failure of good medical treatment to promptly stop acute hemorrhage. 2. If, though the acute hemorrhage has been controlled, slight but frequently recurring hemorrhage persists. 3. If, after the control of a large acute hemorrhage a second hemorrhage occurs within a short time. It is not wise to defer operation until the patient is so far reduced as to render the risk of surgical operation very great. Medical treatment should be persisted in: 1, in cases of acute hemorrhage not preceded by a train of dyspeptic symptoms and not showing a marked tendency to recurrence; 2, in cases in which acute hemorrhage is followed by apparent complete recovery, and in which the patient is free from serious annoyance from dyspeptic symptoms. Operation is also indicated in perforating ulcers of the stomach; chronic dyspepsia without dilatation, which fails to yield to proper medical treatment, and cases of chronic dilatation of the stomach which fail to yield to medical treatment and are not due to a general visceral ptosis.

Medical Record, New York.

September 10.

28 *The Cycle of the Tubercle Bacillus. A Preliminary Announcement. Stephen J. Maher.
29 *Clinical and Other Features of the Recent Epidemic of Cerebrospinal Meningitis. Henry W. Berg.

30 *Mastoiditis with Paralysis of Facial Nerve: Recovery of Paralysis Following Operation. Seymour Oppenheimer.
31 Regarding Hamlet's Sanity. John W. Wainwright.
32 *Illuminating Gas Poisoning: Its Rational Treatment. Ernest V. Hubbard.

28. **Cycle of the Tubercle Bacillus.**—Maher details his findings in the cultivation of a large bacillus which he has named *Bacillus maternus* and which he believes represents a mother shape of the tubercle bacillus. He found the organism in a dark barn. The individual rods from blood or milk cultures measure from three to eight microns in length and from three-fourths to two microns in width. One average rod would cover a dozen average tubercle bacilli. It is a non-motile facultative anærobe. It forms a sediment and scum on bouillon and renders it turbid. It forms an opaque, non-spreading colony on the surface of agar or glycerin-agar in tubes or petrie dishes. Deep colonies in agar resemble those of anthrax. It grows at room temperature, and its spores resist more than 100 degrees of moist heat for an hour. It digests but does not curdle milk. It forms a sunken colony in blood serum and only slightly digests the serum. It quickly dissolves gelatin and shrinks to smaller rods. On ammoniated gelatin the rods are somewhat stouter, with a growth of diplococci. After fifty hours on sugar gelatin the colony consists of many large spores and an immense amount of acid-fast amorphous spore matter, which fills to bursting many of the rods, and which is also found in various rounding shapes, free in the microscopic fields. On potato, a dry opaque gray or lemon-colored growth is formed. Maher has not yet been able to grow a pure colony of *Bacillus maternus* from tubercular sputum, but is satisfied that he has several times recognized individuals and groups of this organism in the fields of blue biscuits and pus-nuclei and acid-fast rods, with which we are all familiar. He has isolated what seems to be a pure culture of *Bacillus maternus* from smegma and also from the spleens of guinea-pigs dead with tuberculosis.

29. **Cerebrospinal Meningitis.**—Berg's usual method of treatment consists of repeated lumbar punctures only when, after a period of improvement, the temperature rises again and symptoms of increased intraspinal and intracranial tension occur. If the cerebrospinal fluid flows from the canula in a continuous stream under tension, the withdrawal of from 15 to 30 c.c. of fluid will do much good. If it escapes drop by drop the puncture will have no effect from a therapeutic standpoint. Sodium iodid is given in considerable doses, from 5 to 10 grains every three hours to a child over a year old; from 15 to 20 grains every three hours to adults. Adults also receive 15 grains of mercuric ointment by inunction in the back of the neck twice daily, until the gums are red. In children with open fontanelles, the oleate of mercury in proper doses is rubbed into the anterior fontanelle. In older children the mercurial ointment is rubbed into the back of the neck and spine, in pieces as large as a bean, several times a day. Icebags should be applied to the head, neck and spine. With these methods, together with the treatment of symptomatic indications, 40 per cent. of recoveries may be expected. When the temperature goes above 103 F. he uses a warm bath, temperature 80 F., in which the patient remains five minutes. The temperature of the bath is then raised to 90 F. and the patient allowed to remain five minutes more. Care must be taken to prevent bed sores, local infection of the skin, eyes, ear, nose and throat. The patient should be placed in a large light room, with plenty of air space and proper ventilation. Sunlight is desirable, as it is one of the most powerful antidotes to the bacteriologic cause of this disease.

30. **Mastoiditis and Facial Paralysis.**—Oppenheimer reports two cases of mastoiditis with paralysis of the facial nerve, both of which recovered after operation. He offers nothing new.

32. **Illuminating Gas Poisoning.**—Hubbard reports a case of this kind in a woman, aged 75, in which, following venesection, abdominal hypodermoclysis was done. The pulse, which had been thready and barely perceptible began to improve within a few minutes. The injection was continued until 1,200 c. c. had been given. After an hour the patient showed the first signs of returning consciousness and by nightfall she had quite recovered. Venesection removed much of the poison and the saline infusion diluted the remaining poison, and furnished the heart with fluid to continue its work until the blood making organs could furnish a new supply. The venesection must be performed early in order to ensure success. The amount of blood to be withdrawn will vary in the individual case. When the pulse becomes feeble it is time to stop The saline infusion is injected until the radial artery at the wrist gives a full steady beat. If four or five hours have passed with no evidence of returning consciousness, a second venesection may be done, but with great caution.

Cincinnati Lancet-Clinic.

September 19.

33 Ductus Cysticus Bills. The Duct of the Cholecyst or Gall Bladder. Byron Robinson.
34 Ice-Cream Rolls; a Report of Two Cases of Ptomaine Poisoning. F. Hoeffer McMechan.

Buffalo Medical Journal.

September.

35 *Post-partum Hemorrhage. J. W. Grosvenor.
36 Adulteration of Food and Food Products. John H. Grant.
37 An Analysis of 50 Hernlotomies. Marshall Clinton.

35. **Postpartum Hemorrhage.**—Grosvenor, in a very excellent article on this subject, calls attention to the following important points: 1, The gravity of the subject; 2, uterine atony, the most frequent cause of postpartum hemorrhage; 3, meddlesome midwifery, a prolific cause of postpartum hemorrhage; 4, profound anesthesia a causal factor; 5, the need of watchfulness and alertness on the part of the accoucheur; 6, the treatment demands that the accoucheur be prompt and resourceful; 7, the necessity of both contraction and retraction of the uterus; 8, although cases left to nature have recovered, a do-nothing policy is strongly condemned; 9, the usefulness of prophylactic treatment, especially in cases which indicate the existence of a hemorrhagic diathesis; 10, heredity a causal factor of the hemorrhagic diathesis; 11, the advantage of medical superintendance of pregnancy from its incipiency to its close; 12, the importance of after-treatment.

Archives of Pediatrics, New York.

August.

38 *Some Considerations Regarding Substitute Feeding During the First Year. Thomas M. Rotch.
39 *The Influence of Breast Feeding on the Infant's Development. Henry D. Chapin.
40 *Primary Malignant Tumor of Both Adrenal Glands with Secondary Affection of the Liver. Samuel Amberg.
41 Simple Method of Modifying Milk in the Tenements. Emelyn L. Coolidge.

38.—This article has appeared elsewhere. See THE JOURNAL of September 3, 1898, p. 697.

39.—Ibid., title 65, p. 697.

40. **Primary Malignant Tumor of Adrenal Glands.**—Amberg reports a case of this kind occurring in a child two months old. The parents first noticed a slight swelling of the abdomen, which increased rapidly. On examination he found the enlargement, some edema of the abdominal walls and the superficial veins much distended. On palpation, a hard smooth mass was felt, chiefly in the right side of the abdomen, extending from the costal margin down to the right inguinal region, passing deeply into the right flank and filling up the whole space between the ribs and the iliac crest. In the right inguinal region a firm edge was felt, which could be traced from Poupart's ligament toward the navel, passing below the navel and then gradually ascending. To the left of the navel a notch could indistinctly be felt, but it was not possible to distinguish two separate masses. The length of the tumor mass in the median line was 16 cm., the distance from the interclavicular notch to the umbilicus was 21.5 cm., and the greatest circumference of the abdomen was 46 cm. The uniform tumor apparently represented the liver. The red blood corpuscles numbered 2,800,000; the white 11,000, of which 79 per cent. were polymorphonuclears, 18.5 per cent. small mononuclears, 2.3 per cent. large mononuclears and transitionals, and 0.2 per cent. eosinophiles. The child died in convulsions six days after it was seen the first time. The autopsy disclosed a tumor of the left adrenal gland and a very much enlarged liver. The liver was cirrhotic and fatty, and contained numerous masses

of cells, the same as those in the adrenal tumor. The tumor was apparently a malignant one, taking its origin, probably, from the medulla of the adrenal gland. The growth in the adrenal itself was too far advanced to give any information regarding its origin. Morphologically, the tumor may be classed as a carcinoma or as an alveolar sarcoma.

American Journal of Orthopedic Surgery, Philadelphia.

August.

42 President's Address, American Orthopedic Association. Reginald H. Sayre.
43 *Technic of Neuroplasty. Hans Spitzy.
44 Report of a Case of Nerve Anastomosis for the Cure of Infantile Palsy. James K. Young.
45 *Final Results in Tendon Transplantation. Albert Hoffa.
46 *Surgical Procedures for the Relief of Infantile Paralysis of the Lower Leg. John Dane and David Townsend.
47 *Value of Bier's "Congestive Method" in the Treatment of Joint Tuberculosis. Albert H. Frieberg.
48 Distinction Between Fracture of the Neck of the Femur and Epiphyseal Disjunction in Early Life, with Reference to Its Influence on Prognosis and Treatment. Royal Whitman.
49 Operative Treatment of Intracapsular Fracture of the Hip; a Report of Cases. Charles F. Painter.
50 Anatomic Treatment of Fracture of the Neck of the Femur by Which Bony Union Can Be Secured in the Large Majority of Cases. James E. Moore.
51 Extirpation of the Tensor Vagina Femoris for the Correction of Internal Rotation in Spastic Paraplegia (Little's Disease). V. P. Gibney.
52 The Heidelberg Splint; a New Bandage. O. Vulpius.
53 Treatment of Acute and Subacute Inflammations of the Knee Joint by Apparatus Permitting Locomotion with Protected Antero-posterior Motion at the Joint. Newton M. Shaffer.
54 Influence of Growth on the Course and Treatment of Congenital Clubfoot. A. B. Judson.
55 Report of Experiments to Determine Whether Plaster of Paris Contracts or Expands in Setting. J. Torrence Rugh.

43. **Technic of Neuroplasty.**—Experiments on animals, as well as operations on man, have proved that it is possible to establish reciprocal connection between two different nerves. Splitting and grafting of nerves have also been performed on man, and, in some cases, with good results. Spitzy carried on experiments for the purpose of determining the kinds of paralysis that are observed most frequently, and the best methods for correcting the same. Dogs were used, and his results were good. The first rule is most scrupulous asepsis and a careful closure of the incision. The first experiment consisted of grafting the perineal nerve on the tibial. Clinical tests showed a good result. Microscopic sections made from tissue taken from the site of union showed distinctly the passing of nerve fibers from the stem of the tibial nerve into the implanted peripheral stub of the perineal. Other experiments were equally successful. Neuroplasty should be resorted to in cases of paralysis where the period of spontaneous regeneration has passed and when other therapeutic measures have proved useless, if the interruption of the conductivity can not be remedied by means of an operation (excision of the scar, primary or secondary suture, neurolysis.) Neuroplasty is to be recommended in any case before an extensive tenoplasty is attempted. The author expresses the opinion that these plastic operations are, at all events, worth a trial. The advantage of the method is that it does not interfere with any other methods known and practiced, but is an addition and an increase to our therapeutic resources.

45. **Final Results in Tendon Transplantation.**—Hoffa says that in order to achieve a good result after a tendon transplantation four conditions are necessary: 1. Perfect asepsis. 2. Prevention of hemorrhage. 3. Healthy muscle material. 4. the tendons must be united under certain tension. Not much can be expected from an operation on a limb totally paralyzed. The leg cannot be made to functionate again, but the patient can be freed from the annoyance of depending on orthopedic apparatus. This can be done in a great number of cases. In other cases a certain amount of tendinous fixation of the joints can be produced which still allows a certain amount of functional activity. In some cases it is possible to bring the muscle back to life. These are the ones in which the regenerative powers are still present in the muscles. By shortening the muscles their elasticity and tone is restored. As to the method of operating, Hoffa believes that the best results can be obtained by combining the operation of Nicoladoni with that of Lange. Of course, the factor of individual experience in the performance of these operations counts for much. The most important essential for the success of the operation is to obtain the highest possible tension with an over correction of the deformity. This necessitates the correction of the deformity before operating. The longer and more careful the after-treatment the better are the final results. Hoffa refers briefly to the good results he has obtained in paralytic club foot, shoulder joint paralysis, spastic contracture of the forearm and elbow, and paralytic talipes calcaneus.

46. **Infantile Paralysis of the Lower Leg.**—The authors have made a comparative study of the results of various surgical operations for the improvement of the conditions found in the lower limb as a result of infantile paralysis in 50 consecutive cases, with a view to determining what operations offered the best prospect of a useful limb. As the operations were performed by various surgeons, the equation of personal technic was practically eliminated. It is important to remember, however, that all these cases were dispensary patients, and were cared for in the dispensary after the operation. The present status of 14 cases could not be obtained. These statistics would seem to show

1. That in all cases where an attempt was made to restore the balance of muscular power by means of a transference of either the peroneus tertius or the extensor longus hallucis, the transplanted muscle has failed to hypertrophy to an extent sufficient to cause any benefit. (Eleven such cases fail to show any improvement.)

2. That simply shortening the extensor tendons in cases of equinus, even aided by transplantation of the flexor longus hallucis, is of no prominent benefit. (Two operations, both followed by relapse.)

3. That, where the peroneI are inserted into a paralyzed tendo Achillis for the relief of calcaneus, the result is usually disappointing. (Five operations, the result in four being distinctly poor, and in one only fair.)

4. That, in cases where the peroneI are transplanted to the inner side of the foot for the correction of a valgus deformity, the results are slightly better, but there are relatively few successes. (Six operations. Two results were poor, two fair, and only two good.)

5. That, where a portion of the tendo Achillis is transplanted to the extensor side of the foot for the relief of equinus, the condition is distinctly improved. (Two operations, that in which the tendon was joined to the common extensor giving a stronger foot when it was united with the anterior tibial.)

6. That the best results following tendon transplantation were in cases where the whole or a portion of the anterior tibial was transferred to the outer border of the foot for the relief of equinovarus. (Three operations, showing two good results and one that was fair. The latter was performed by the so-called Lange method of lengthening the transplanted tendon by means of braided silk. The silk acted as a foreign body, and sloughed, thus preventing a good result. Experience with cases that are too recent as yet to report would seem to show that, where the transplanted tendon can be given a sub-periosteal insertion in the cuboid, the functional result is better than when it is inserted into the tendon of the peroneus brevis. All the latter cases promising well.)

7. That astragalectomy uniformly yields a good, useful foot. (Three cases, and all successful.)

8. That the results of arthodesis of the tibio-astragaloid joint are, as a rule, excellent. (Nine operations, with seven good results. In one of these cases complete immobilization was not secured at the first operation, but a second gave a most excellent result. In the other there was no improvement, due probably to a failure to remove a sufficient amount of the articular cartilage. A somewhat stronger foot was found in the cases of arthrodesis than these where astragalectomy had been performed.)

The conclusion would seem to be that, while tendon transplantation may in certain cases yield a satisfactory result, the selection of cases for this operation should be much more careful than it was three or four years ago, and that for the great majority of hospital cases either astragalectomy or arthrodesis offers by far the greatest promise for obtaining a strong, useful foot several years after the operation.

47. **Bier's Treatment in Joint Tuberculosis.**—Freiberg discusses Bier's "congestive method" in the treatment of joint tuberculosis. Originally, the congestion produced was as great as possible; the parts became not only turgid with venous blood, but also cold. Considerable pain had to be endured by the patient, and the constricting bandage was applied for hours at a time. Bier has modified his method so that all possibility of damage by it would seem to be removed. As at present advocated, the congestion should never pass beyond the "hot stage." The patient should feel no pain; the treatment should not be more than one hour daily. Freiberg has found that by using a bandage of elastic cotton webbing the degree of congestion is controlled more easily than when the rubber bandage is used. In patients of ordinary intelligence the proper application of the bandage is very soon learned, so that it can be applied at home. In conjunction with the Bier method, Freiberg insists on immobilization and protection, the same as heretofore. He regards the method as an adjuvant to the re-

sources long at our disposal, but by no means destined to supplant them. The improvement in results is unquestionable, but not so great that he would be willing to trust to congestion alone. The congestion method of treatment has an influence on muscular atrophy by accelerating the reparative process. The possibility of cure by congestion, says the author, is never to be ignored. It would seem of special importance in diseases of the wrist and ankle; but to attain success by means of Bier's method requires time, and patience, and care in detail. Unreasonable things should not be expected of it. Three cases are cited in which the method was used successfully.

Journal of the Association of Military Surgeons, Carlisle, Pa.

September.

56 Observations on the Campaign in Western Porto Rico During the Spanish-American War. Bailey K. Ashford.
57 *Differential Diagnosis of Typhoid Fever in Its Earliest Stages. William C. Rucker.
58 Report of a Case of Malarial Sciatica. Elon O. Huntington.
59 United States Army General Hospital at the Presidio. Alfred C. Girard.

57. **Differential Diagnosis of Typhoid Fever.**—Rucker gives a splendid review of the differential diagnosis of typhoid fever, covering the entire field, including all the various laboratory methods that serve as a means of diagnosis. He had fused his own experiences with those of many other observers and gives an impersonal résumé of the whole, endeavoring to treat the subject in its entirety rather than make the paper an excuse for a dissertation on one particular point. He summarizes his paper as follows: 1. There is no single symptom on which alone an early diagnosis of typhoid fever can be made. It is only by careful consideration of the symptom-complex that a clinical diagnosis can be arrived at. 2. The most trustworthy, as well as the earliest sign of typhoid fever is the presence in the circulating blood of the bacillus of Eberth. 3. The demonstration of the bacillus of Eberth in the blood is not beyond any fairly well equipped laboratory. 4. The bacillus of Eberth is found in the feces later than in the blood, but with comparative ease. The presence of the *Bacillus typhosus* in the feces is of great value as a corroborative sign. 5. The presence of the *Bacillus typhosus* in the rose spots is a trustworthy sign, but has no advantages over examination of the blood from other localities. 6. The serum reaction of Widal is seldom demonstrable during the earliest stages of typhoid fever. It is of value only in the higher dilutions.

Medicine, Detroit.

August.

60 *The Early Lesions of Arteriosclerosis, with Special Reference to Alterations in the Elastics. W. M. L. Coplin.
61 Acute Suppurative Disease of the Mastoid Complicating Influenza, with Report of Three Cases. P. S. Donnellan.
62 *The Mental Disorders of Neurasthenia. Frank Parsons Norbury.
63 The Trophic Disturbances of the Fifth Pair of Nerves. Harold N. Moyer.
64 The Limitation of Untoward Effects in Anesthesia. Henry B. Hollen.

September.

65 *Bacteriologic Study of Scarlet Fever. J. F. Schamberg and Nathaniel Gildersleeve.
66 Report of a Case of Stokes-Adams Disease. R. L. Pitfield.
67 *Tentative Surgical Methods in the Treatment of Some Stomach Maladies. Thomas H. Manley.
68 Importance of Antepartum Examination. Frederick Leavitt.
69 The Molar Teeth and the Patellar Reflex in Heredity Syphilitic Interstitial Keratitis. George F. Suker.
70 Brometone in Diseases of the Eye, Ear, Nose and Throat. J. J. Kyle.
71 Syringomyelia. Richard C. Newton.
72 *Primary Carcinoma of the Vagina. Charles G. Cumston.

60.—This article has appeared elsewhere. See THE JOURNAL of July 16, 98, p. 226.

62.—See abstract in THE JOURNAL of July 30, 52, p. 354.

65. **Bacteriological Study of Scarlet Fever.**—Schamberg and Gildersleeve examined bacteriologically a series of cases of scarlet fever. The cultures were made between the second and sixth day of the disease. The blood of twenty cases was examined and negative results obtained in all. Streptococci and staphylococci were found in the vast majority of the cases. Cultures were made from the throats of 100 apparently well persons, and streptococci were found in 82 per cent. Both streptococci and staphylococci undoubtedly are frequently concerned in the complications of scarlet fever, but are not to be looked on as the specific agent. The diplococcus described by Class as the cause of scarlet fever was found by the authors in a comparatively small per cent. of the cases examined. They do not regard this organism as bearing any etiologic relationship to the disease. They believe that the failure to discover the specific cause of scarlet fever may have been due to the fact that almost exclusive search has been made for vegetable parasites and not for animal parasites. The findings of Mallory, of protozoa-like bodies in the skin of scarlet fever patients, will doubtless stimulate research along these lines.

67. **Tentative Surgical Methods in Stomach Maladies.**—Manley considers mechanical therapy, gastric therapy and therapy of the abdominal walls in their relation to the treatment of affections of the stomach, both functional and organic, reviewing accepted methods and procedures.

72. **Primary Carcinoma of the Vagina.**—This is a full discussion of this subject, particularly the surgical treatment, with a report of one case, the patient dying about four months after the operation.

St. Paul Medical Journal.

September.

73 *On Certain Non-diphtheritic Membranous Anginas. Louis B. Wilson.
74 Duodenal Ulcer, Symptoms and Diagnosis. Christopher Graham.
75 Notes on the Management of Fractures of the Lower Extremity, with Hodgen's Splint, with Report of Cases. W. T. Adams.
76 *Subparietal Injuries of the Kidneys. Walter Courtney.
77 *Pneumonia. A. T. Coney.
78 The Abuse of Drugs. C. R. Christenson.
79 *Surgical Treatment of Varicose Veins. C. H. Mayo.

73. **Nondiphtheritic Membranous Angina.**—Wilson divides the non-diphtheritic pseudomembranous anginas into several groups, each of which is a more or less distinct clinical entity associated with a species of micro-organism either alone or in great preponderance. These nondiphtheritic anginas are important not only because of the necessity of differentiating them from diphtheria, but also because they are frequently transmissable; and their treatment should vary according to the micro-organism present. Careful clinical observations, in connection with full bacteriologic investigations, should be made in each case. In order to determine as early as possible the etiologic factor in anginas, cover-slip or slide preparations from the membrane, as well as cultures on diphtheria media, should be made by the physician on his first visit. These should be dried without heating, then fixed by heat, and either stained by the physician, or sent to a laboratory with the culture for further examination. Wherever possible, more extensive bacteriologic investigation should be made. Among the associated organisms found by Wilson were streptococci, diplococcus pneumoniæ, Friedlander's bacillus, spirillum of Vincent, and blastomyces. He believes that the blastomyces is a much more common cause of angina than is believed. These cases present a clinical history of onset with chill, somewhat rapid rise in temperature, malaise and considerable prostration. The tonsils are congested, swollen, and rapidly become covered by a thin, grayish white membrane, which in most cases extended forward from the tonsils over the anterior faucial pillar, and in some cases upward, involving the uvula and soft palate. The membrane does not yield readily to local treatment, to silver nitrate, iodin, lactic acid, carbolic acid, or formalin. Antitoxin has been used without any effect on the membrane. Two cases in which no other organisms were obtained in culture proved fatal. Blastomyces were found alone in 136 cases, and in 97 cases they were associated with bacillus diphtheriæ. The organism grows abundantly on the ordinary laboratory media, forming a thick, white and moist growth. In fluid media the growth sinks to the bottom of the tube in a few days. Glucose and maltose are fermented, but without the formation of alcohol. No fermentation occurs in lactose. The organism stains readily, but unevenly, showing nuclei, vacuoles, and chromatophilic granules. No spore formation has been produced.

76. **Injuries of the Kidney.**—Courtney discusses this subject,

reports four cases, and concludes by saying that the inference to be drawn is that nephrectomy should only be performed early when the renal vessels are known to be torn, or when there is such unmistakable disorganization of the kidney structure as to make it reasonably certain that resumption of function can not be expected.

77. **Pneumonia.**—Conley gives a short review of the treatment of pneumonia for the last fifty years, but offers nothing new.

79. **Surgical Treatment of Varicose Veins.**—Mayo is of the opinion that the essential predisposing cause of varicose veins is a congenital defect in the vessels or their innervation, which, in some cases, may be aggravated by occupation, injury, childbearing or constipation. He favors a partial Schede operation or oval incision above a large ulcer combined with excision of the ulcer and skingrafting. At the same time, the Trendelenburg operation, or the more extensive excision of the internal saphenous vein from the upper third of the thigh to a point six or eight inches below the knee, is also performed. The removal of short areas of veins is reserved for those cases with involvement of the veins of the posterior thigh or the external saphenous. In a very few cases where the veins are enormously and irregularly dilated, the stripping process, described below, is impossible through the whole extent of the saphenous. The Bristol method is then used as an adjunct to the enucleation treatment. The author's method is as follows: The vein is sought for and severed in the upper third of the thigh. The proximal end is ligated, the lower end is clamped an inch from the end, which is passed through the ring of the enucleator (a ¼ in. ring of steel with a long handle, not unlike a blunt uterine currette) or placed in the tube of the forceps (which are hollowed out in each blade so as to form a long tube, when closed, about ¼ of an inch in diameter) and the clamps are transferred to the end of the vein. By gentle pushing force the ring or forceps is pushed down the vein, held under tension for six or eight inches, tearing off the lateral branches when the point of the instrument is forced against the skin from beneath, and a small incision made in the skin to the ring or forceps, which is pushed through the opening holding the vein in it like a thread in a needle eye. The vein loop is drawn out of the opening and also from the instrument, which is removed and re-threaded and again forced through the new skin opening, following the vein, and is pushed down to a lower point where a small incision is again made and the same process of removal repeated. The small lateral branches are torn off and, as a rule, have enough muscle structure to close themselves. Below the knee, the branches are larger and the vein is more adherent, so that a short distance can be traversed. Hemorrhage is avoided by position. An ordinary gynecologic standard is placed in position and the leg raised in straight or extended position and supported by the ankle. This renders the limb partially bloodless and secures elevation and accessibility of the field of operation. More than momentary hemorrhage can be checked by a small pack, or an assistant can check it by pressure pad held against the skin over the region from which the blood escaped from the vessels. This method has reduced the time for operation very considerably, and has placed it in the class of relatively trivial operations, although sepsis may render it one of the most serious.

Cleveland Medical Journal.

September.

80 *Syphilis of the Stomach. Charles F. Hoover.
81 *A Year's Experience with the Convulsions of Children. D. S. Hanson.
82 Eclampsia and Its Treatment. Martin Stamm.
83 Paranoia. E. C. Brown.

80. **Syphilis of the Stomach.**—Hoover says that the varied characters of syphilis of the stomach, and the symptoms it may produce, have so many points in common with other diseases that the diagnosis during life must rest on the therapeutic test. Three cases in point are reported, each presenting entirely different symptoms. In none of the cases was there a palpable tumor or area of maximum tenderness. Nothing abnormal could be detected in physical examination, as far as the stomach was concerned. In two cases the only symptoms referable to the stomach were pain, and vomiting, after the ingestion of food. Although two cases gave a clear history of syphilis, no evidences of syphilis were apparent on physical examination. The third case had a saddle nose and perforated soft palate. In these cases it is important to make a diagnosis so that proper treatment can be followed. Unless the physician is strongly impressed with the possibility of syphilis being the etiologic factor, iodid of potassium will not be given on account of its irritating properties to the stomach. When in doubt, give iodid of potassium, is a maxim easily followed when the stomach is not at fault. But the administration of iodid of potassium in a doubtful case in which gastric pain and vomiting are the conspicuous symptoms, is abhorent to the mind of the therapeutist unless the idea of syphilis is paramount in his speculations.

81. **Convulsions of Children.**—Hanson details his experiences with the convulsions of children, making special reference to the etiology of the cases observed, and emphasizes the importance of chloroform inhalations, chloral enemata, hypodermic injection of morphin, and the inhalation of oxygen in the treatment of these cases, each to be used as indicated.

Indiana Medical Journal, Indianapolis.

August.

84 Paretic Dementia. Ernest C. Reyer.
85 *Will the Long Continued Administration of Digitalis Induce Cardiac Hypertrophy? Frank B. Wynn.
86 Case of Mechanical Ileus Due to a Constricting Band and Angulation with Adhesions. L. H. Dunning.
87 Use of the Galvano Cautery in Enlarged Prostate Through the Median Perineal Incision. Wm. N. Wishard.
88 Perineal Prostatectomy the Treatment of Choice in Prostatic Hypertrophy. Joseph Rilus Eastman.
89 Club-foot. J. H. Oliver.

September.

90 *Intestinal Obstruction, with Report of Cases. L. G. Bowers.
91 *Treatment of Fractures and Dislocations According to Modern Principles. J. R. Fattic.
92 *The Yeast Poultice, with Instances of Its Successful Use. E. J. Kempf.

85.—This article appeared in THE JOURNAL of July 16, p. 164.

90. **Intestinal Obstruction.**—Bowers discusses the etiology, dynamics, and symptoms of intestinal obstruction, and reports two cases, one a man aged 45 years, in which a Meckel's diverticulum was the cause of the obstruction; the second case, a boy 3 years old, in which the obstruction was caused by a portion of the bowel being forced through a slip in the mesentery. An end-to-end anastomosis with the Murphy button was performed in the first case, and the patient recovered. The second patient died from the results of a very extensive gangrene of the bowel.

91. **Points in Treating Fractures and Dislocations.**—This is a general discussion of the subject, as indicated in the title, in the course of which Fattic sounds a note of warning with reference to the improper use of the *x*-ray in determining whether or not a fracture has been attended to properly. Patients sometimes are inclined to base their intention of bringing suit for malpractice on the ground that the fracture was not set properly because the *x*-ray's shadow shows badly and oftentimes gives the appearance of deformity when for all practical purposes it was perfect. In this way, in incompetent hands, the *x*-rays may wreak injustice on innocent practitioners.

92. **Yeast Poultices.**—Kempf reports six cases of sepsis and gangrene in which the yeast poultice was used with satisfaction. His method is as follows: Beer yeast, one quart; cornmeal, finely sifted, one pint; mix and place the mixture near a fire until it rises. Then mix the thin raised dough with about two ounces of finely powdered charcoal. Apply the mixture on a thick cloth directly to the affected part and renew every twenty-four hours. It becomes dry and adheres to the parts but can be removed readily with warm water. This is a most efficient antiseptic poultice for the treatment of gangrene, erysipelas, eczema, ulcers, etc.

Medical Fortnightly, St. Louis.

August 10.

93 Is the Profession Growing Less Ethical? M. V. Ball.
94 American Archeology from the Medical Standpoint. A. L. Benedict.
95 Ocular Lesions in Scarlatina. Eliet O. Sisson.

August 25.

96 The X-Ray as a Therapeutic Agent. Edwin Walker.
97 *Mental Disorders of Neurasthenia. Frank P. Norbury.
98 An Analysis of Last Year's Work in the Municipal Dispensary of the City of St. Louis. Henry J. Scherck.

97.—See abstract in THE JOURNAL, xlii, p. 1440

Virginia Medical Semi-Monthly, Richmond.

August 12.

99 Appendicitis. John T. Graham.
100 Complications and Sequelæ of Parotitis. D. L. Kingsolver.
101 Success in Medicine and the Way It May Be Achieved. George Tully Vaughan.
102 Chloroform Anesthesia. A. Jacoby.
103 Should the Proposed New Constitution and By-Laws of the Medical Society Be Adopted? George B. Jennings.
104 Professional Union: Or, A United Profession. J. G. Carpenter.

August 26.

105 Adenoids and Enlarged Tonsils. Joseph A. White.
106 State Medical Organizations and the American Medical Association. Landon B. Edwards.
107 Smallpox Occurring During Pregnancy. Lewellyn Eliot.
108 "Arthritis Deformans," with Report of Case. Emmett F. Reese.
109 A Case of Acute Yellow Atrophy of Liver, Complicating Appendicitis. Lewis C. Bosher.
110 Plea for the Use of a Standard Whisky. Thomas R. Evans.
111 Hebb's Improved Clamp for Earle's Method of Operating for Hemorrhoids. S. Earle, Jr.

Annals of Ophthalmology, St. Louis.

July.

112 An Improved Scale for Determining Muscular Insufficiencies. Harold Bailey.
113 Case of Bilateral Enlargement of Lachrymal Glands. William T. Shoemaker.
114 Microphthalmos and Congenital Ankyloblepharon; Two Cases. Walter H. Snyder.
115 Paralysis of the Upward Movements of the Eyes. William C. Posey.
116 Suggestions as to Postmydriatic Refraction Tests. George M. Gould.
117 Pemphigus of the Conjunctiva, with Report of a Case. S. H. Brown.
118 Observations on the Pathology of the Crystalline Lens. E. S. Thomson.
119 Historic Note Regarding the Optic Chiasm and Some Points Referring to Monocular and Binocular Vision. M. Marquez.

Atlanta Journal-Record of Medicine.

August.

120 Study of a Case of Lateral Curvature of the Spine: A Report of an Operation for the Deformity. (Concluded.) Michael Hoke.
121 The Prevention of Diarrhea, with Special Reference to Bacteriology. Robert W. Hynds.

Denver Medical Times.

August.

122 Normal Obstetrics. (To be continued.) T. Mitchell Burns.
123 An Outline of Hematuria. Edward C. Hill.
124 A Model Act to Protect the Public Health and Regulate the Practice of Medicine. S. D. Van Meter.

Merck's Archives, New York.

August.

125 Teaching and the Text-Books of Materia Medica and Therapeutics. John Forrest.
126 Index of Disease Alphabetically Arranged, with Their Modern Treatment. G. Bjorkman.

Memphis Medical Monthly.

August.

127 Pneumonia. James S. Rawlins.
128 Hints on the Diagnosis and Treatment of Pneumonia in Young Children. Hermon Hawkins.
129 Technic of the Operation for Appendicitis. J. E. Johnson.
130 Clinical Notes on Three Cases of Appendicitis. Alfred Moore.
131 Two Recent Cases of Extra-Uterine Pregnancy. John M. Maury.
132 The Management of Typhoid Convalescence. J. R. Nelson.
133 Conjunctivitis. R. S. Penn.
134 Treatment of Chronic Posterior Urethritis. John L. Jelks.

Texas Medical Journal, Austin.

August.

135 The Medical Profession: A Contributory Factor to the Death Rate of Consumptives. C. H. Wilkinson.
136 Albargin Joint Review, with Personal Experience. Dr. Seifert.

St. Louis Courier of Medicine.

August.

137 Modern Treatment of Cholera Infantum. Robert M. Sterrett.
138 Value of Differential Leucocyte Count in the Diagnosis of the Diseases of Infancy. John Zahorsky.
139 Angioneurotic Edema; Report of a Case. M. George Gorin.
140 Brief Notes on Three Cases of Strangulated Hernia. John Young Brown.
141 Serum Treatment of Typhoid Fever. E. A. Babler.

Oklahoma Medical-News Journal, Oklahoma City.

August.

142 Typhoid Fever: Diagnosis and Treatment. Charles Blickensderfer.
143 Elbow Joint and Some of Its Abnormalities. R. H. Tullis.

Interstate Medical Journal, St. Louis.

August.

144 Diagnostic Considerations of Hemorrhage from the Stomach. F. Gregory Connell.
145 Fracture of the Forearm Followed by Contracture of the Flexor Tendons: Report of a Case. Clifford U. Collins.
146 Surgery of Arthritic Deformans. Hermann B. Gessner.
147 Plastic Surgery. C. E. Ruth.

Medical Age, Detroit.

August 25.

148 Chronic Laryngitis as Treated by the General Practitioner. J. T. Pratt.
149 Tuberculous Spondylitis; Diagnosis and Prognosis. John L. Porter.

Carolina Medical Journal, Charlotte, N. C.

August.

150 The Treatment of Prostatic Hypertrophy. Lewis C. Bosher.
151 Cholera Infantum. W. F. Chenault.
152 Fecal Vomiting in Intestinal Obstruction. A. K. Bond.

Medical and Surgical Monitor, Indianapolis.

August 15.

153 The Typhoid Ulcer; Its Surgical Aspect. Thomas B. Noble.
154 * Important Triangles of the Thigh. H. R. Allen.
155 Etiology and Diagnosis of Scarlet Fever. A. L. Wilson.
156 Intestinal Obstruction, with Report of Cases. L. G. Bowers.
157 Fracture of Skull Base, Remote Effects. F. W. Foxworthy.
158 Experience and Theory. J. W. Crismond.

Fort Wayne Medical Journal-Magazine.

August.

159 Surgical Diagnosis. Miles F. Porter.
160 Some Atypical Cases in Abdominal Surgery. Hal C. Wyman.

Northwest Medicine, Seattle, Wash.

August.

161 Address, Washington State Medical Association. Franz H. Coe.
162 The Clean Milk Problem. Kenelm Winslow.

Colorado Medicine, Denver.

August.

163 Acute Otitis Media and Mastoiditis; Recent Cases. Wm. C. Bane.
164 Tuberculosis in Its Relation to Public Health. C. E. Cooper.
165 The State Board of Health and Tuberculosis. J. N. Hall.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

The Practitioner, London.

September.

1 *Tremors. F. W. Mott.
2 Total Enucleation of the Prostate for Radical Cure of Enlargement of That Organ. P. J. Freyer.
3 *The Diagnostic Value of Hemiplegia of Gradual Onset as a Sign of Cerebral Tumor. R. T. Williamson.
4 Diagnosis of Pulmonary Tuberculosis in Infants and Young Children. R. V. Pearson.
5 *Ulcus Carcinomatosum. R. G. A. Moynihan.
6 Some Distinctions Between Hysteria and Neurasthenia, and Their Association with Other Diseases. W. L. Ascherson.
7 *An Unusual Variety of Pleurisy in Children. C. Riviere.
8 Paralytic Deformities and Their Modern Treatment. J. Jackson Clarke.
9 Recent Work in Anesthesia. J. Blumfeld.

1. Tremors.—Mott classifies the tremors arising in disease as follows: 1. Organic disease of the nervous system. 2. Tremors due to poisoning. 3. Tremors in infectious diseases. 4. Neuropathic tremors of degenerates. 5. Tremors of neuroses: (*a*) exopthalmic goiter, (*b*) paralysis agitans, (*c*) neurasthenia, (*d*) hysteria. No classification is quite satisfactory. Very often the tremor is polymorphic—at one time, or in one case, existing only during repose, in another disappearing during rest. Several diseases may present a fine vibratory tremor, such as Graves' disease, neurasthenia, emotionalism and alcoholism. The author believes that tremor is due to a disturbance of the normal innervation currents passing from the spinal motor neurons to synergic groups of muscles, whether these are in action or in passive tonic contraction. A functional or organic disturbance of the nervous structures which regulate and adjust the outflow of the innervation currents from these spinal motor neurons would serve as a cause of tremor. Tremors should be investigated by a consideration of the following questions: 1. Are the tremors local or general? 2. Are they continuously present, or only transitory and called for by certain circumstances, such as emotion, attention, irri-

tation or bodily fatigue? 3. Do they occur in the part at rest? Do they cease during sleep? Are they provoked by intentional movements? 4. Is the amplitude of the oscillations extensive or not—in other words, is the tremor coarse and obvious or fine and only discoverable by careful examination? 5. Is the rhythm quick (8 to 9 oscillations a second) or slow (4 to 5 oscillations)?

3. **Hemiplegia With Cerebral Tumor.**—Williamson calls attention to the value of hemiplegia of gradual onset as a sign of brain tumor, even when optic neuritis is absent, or when optic neuritis, headache, and vomiting are all absent. Stated in other words—provided there are no indications of cerebral abscess—progressive hemiplegia, or hemiplegia of gradual onset, in which weeks or a few months elapse before the paralysis is complete, may be regarded as strong evidence of cerebral tumor even when optic neuritis is absent, or when optic neuritis, headache and vomiting are all absent.

5. **Ulcus Carcinomatosum.**—Moynihan reports one case of malignant disease of the stomach in which both the clinical history and microscopic examination showed that the origin of the growth was a chronic ulcer.

7. **Unusual Variety of Pleurisy in Children.**—Riviere reports six cases of loculated effusion occurring over the middle lobe and closely simulating other pathologic changes occurring in children in the same situation, such as pneumonia with subsequent effusion at the base; fibrosis of the middle lobe; pulmonary or glandular tuberculosis; pulmonary collapse and chronic lung disease in the opposite side of the chest, either tubercular or bronchiectatic in nature. The diagnosis was not confirmed with the exploring syringe in any of these cases, the author not deeming such a measure justifiable under the circumstances.

Intercolonial Medical Journal of Australasia, Melbourne.

July 20.

10 Clinical Examination of the Blood. R. R. Stawell.
11 *Two Cases of Splenectomy. R. A. Stirling.
12 *Six Cases of Splenic Anemia in One Family. J. W. Springthorpe.
13 Notes on a Case of Splenic Anemia. H. Sexten.
14 Notes on a Case of Leucocythemia. Alex. Lewers.
15 Notification of Consumption. A. Jefferis Turner.

11. **Splenectomy.**—Stirling reports two cases of splenectomy for splenic pseudoleukemia that recovered from the operation, but makes no mention of their subsequent history. Both cases were alive one month after operation, and the blood findings had improved remarkably. The red cells in one case numbered 4,820,000, and in the other 4,600,000; leucocytes, 8,000; hemoglobin, 85 per cent. The author considers the following indications for splenectomy: Malarial spleen, splenic pseudoleukemia, splenic leukemia, Banti's disease, wandering spleen, abscess of the spleen, rupture, sarcoma, and possibly hydatids of the spleen.

12. **Six Cases of Splenic Anemia.**—These six patients stood in the relationship of three sisters and one brother, and the latter's son and niece. Two brothers and ten cousins have not been examined to determine whether they are or are not affected. There was no family history of congenital syphilis or of acquired syphilis, except in one instance. The ages of the patients were 28, 19, 23, 30, 7 and 10 respectively. Splenectomy was performed in two of the cases who were still doing well one year after the operation.

Australasian Medical Gazette, Sydney.

July 20.

16 Presidential Address. Melville Jay.
17 *Alexander's Operation on the Round Ligaments. W. J. Stewart MacKay.
18 Presidential Address. A. Andrews.
19 *Early Operation in Typhoid Perforation. A. Jefferis Turner.
20 *Gunshot Wounds in the Abdomen. W. A. Verco.
21 Gunshot Wound of Liver, Aorta, Spine; Survival for 33 Days. B. Poulton.
22 Glioma of the Spinal Cord. J. McDonald Gill.
23 Two Cases of Macrocephaly. A. S. Joske.
24 *The Recent Epidemic of Infantile Paralysis. R. B. Wade.
25 *Ibid. W. F. Litchfield.
26 *Epidemic Polyneuritis. Patrick Blackall.
27 *An Unusual Case of Pneumothorax. W. Morrison.

17. **Alexander's Operation.**—McKay describes, in full, Alexander's operation and concludes as follows: Retroflexion of the uterus in virgins and married women when there is no prolapse and when there are no adhesions present is the condition for which this operation is most suitable. Retroversion of the uterus he considers a suitable condition, for, though a retroversion may cause no symptoms, still if the uterus is allowed to remain in its abnormal position the abdominal pressure may in time convert the retroversion into a prolapsus or a retroflexion. If after performing the curettage he finds the uterus retroverted he shortens the ligaments as a routine practice. If with retroflexion or retroversion there is slight prolapse of the uterus, shortening the round ligaments is a good operation when used in conjunction with amputation of the cervix and colporrhaphy. This allows the uterosacral ligaments (the chief supports of the uterus) to regain their tone. In well-marked cases of prolapsus the operation may be done if the woman is in the child-bearing period; if the menopause is passed, or if near at hand, ventrofixation is the proper operation for severe prolapse, though of late he has adopted a plan of removing the uterus by vaginal hysterectomy. It is such an easy matter to explore the ovaries and tubes through the internal ring that he has adopted this method in preference to the median incision when he wishes to remove a small ovarian cyst or a hydrosalpinx.

19. **Typhoid Perforation.**—Turner says that when a recognizable perforation occurs during an attack of typhoid fever an operation should be performed, and at once.

20. **Gunshot Wounds of the Abdomen.**—Verco says that although military authorities are agreed to leave abdominal bullet wounds alone, as they find that this treatment gives the greatest percentage of recoveries, yet in civil cases, the surroundings being favorable, the abdomen ought to be opened as soon as possible after the injury, and the wounds of the viscera, if any, sewn over. In military practice the wound is often inflicted with the stomach and intestines comparatively empty, and hence there is little danger of leakage. Just the opposite is true of most civil cases. Again, when the stomach and intestines contain much fluid the "explosive action" of the bullet makes a much larger hole. Furthermore, it should be remembered that in the case of missiles fired at close quarters there is much tearing of the hollow organs, and not the clean penetration that occurs in a wound from a missile fired at a distance.

24-25. **Epidemic of Infantile Paralysis.**—Wade details his observations made on 34 cases of epidemic infantile paralysis, 16 of them males and 18 females. The youngest patient was 13 month olds, the oldest 7 years. In each case the onset was sudden, the disease being initiated by anorexia, fever and vomiting. In 2, the vomiting was absent; in 3, the attack was ushered in with fever, vomiting and diarrhea; in only 1 case were there convulsions, and this was in an epileptic; in 1, the paralysis occurred during pneumonia; in 1, during measles, and in only 1 case was there apyrexia. The fever in each case persisted for from four to ten days, ranging between 100 and 102. The most marked symptom was pain in the affected limbs, and this was present in 28 out of the 34 cases. Marked tenderness existed in the affected muscles and persisted for some time, in one case lasting two months, and in most cases from three to four weeks. In only two cases was tenderness absent. The muscles of the limbs which were affected in all cases, either alone or in conjunction with others, belong without exception to the extensor groups, and were the trapezius, supraspinatus and infraspinatus, deltoid, triceps and extensors of the fingers in the upper limb; while in the lower were the quadriceps, peronei and extensors of the foot. The flexors and adductors were never involved alone, but only as a part of the general paralysis of the limb. With the onset of paralysis the affected muscles became limp and flabby, but no wasting was noticed. A certain amount of recovery is the rule, but in every case there are some muscles or groups of muscles that show no indication of it. Recovery is slow, does not begin until about six weeks afterward, and in some cases improvement is still going on after four months. The superficial skin reflexes and the knee-jerks were present or not, according as their corresponding muscle was paralyzed or not. Kernig's sign was present in 3 cases; in each case the erector spinæ

was involved. During the acute attack, before the onset of the paralysis, the essential factor to help in arriving at a diagnosis is the tenderness of the muscles. After the appearance of the paralysis, it has to be distinguished from multiple neuritis, which may be done by its acute onset, the want of symmetry and the permanency of the paralysis. The treatment must be expectant. When the paralysis is established, massage and the use of the constant current is indicated, but must be delayed until the tenderness has become diminished.

Litchfield gives a brief summary of 25 cases observed by him. The treatment consisted of keeping the paralyzed limbs warm, massage and measures to prevent deformity, the latter in some cases necessitating the use of splints.

26. **Epidemic Polyneuritis.**—Blackall reports six cases of epidemic polyneuritis, all between the ages of 3 and 18. The disease comes on gradually. The patient feels out of sorts for one day, and the next is very ill and complains of headache. Vomiting now usually comes on, together with pains in the abdomen, more especially in the neighborhood of the cecum. The tongue is thickly coated and the bowels are constipated. Temperature, 101 or 102. Pulse is slightly and the breathing considerably accelerated. At this stage of the attack it is apt to be mistaken for appendicitis, but there is an entire absence of muscular rigidity when pressure is made over the seat of pain. A day later the vomiting is less severe or gone, the pain in the abdomen is less, but pains are felt all over the body, more especially in the limbs. At this stage the disease simulates subacute rheumatism, but is differentiated by the absence of swelling or heat or weakness locally, and the absence of pain in the joints. The pains in the limbs become less, but the loss of muscular power becomes absolute. The reflexes are lost. The *tache méningéale* is well developed. There may be retention of urine. The breathing is short and gasping and is entirely diaphragmatic. The patient speaks with difficulty. The temperature remains up from a week to three weeks. The paralysis gradually disappears, but in three cases out of four that regain their usual health the patients are unable to extend one arm from the body, although they can flex, extend and rotate the forearm, and the power of grasp is not diminished. The muscles that cover the scapula, the shoulder joint and the arm waste away, but the muscles of the forearm are not affected. In two cases the right arm, and in one the left, was affected. The time that has elapsed since recovery from the illness is too short to offer an opinion as to whether the paralysis is likely to be permanent.

27. **Pneumothorax.**—This was a case of suppurating hydatid cyst, about the size of a small orange, filled with daughter cysts.

Presse Médicale, Paris.

28 (No. 63.) *Les indications de la cure de déchloruration. A. Javal.
29 *De la nécessité de l'enseignement obligatoire de l'otologie dans les facultés de médecine. A. Politzer.
30 Assimilation légale des maladies professionelles aux accidents de travail. J. P. Langlois.
31 *La diète dans les néphrites. Köster. Abstract.
32 *Diagnostic différentiel de la fièvre jaune (yellow fever). M. A. Lengua. Abstract.
33 (No. 64.) *Le rôle des leucocytes dans l'absorption et l'élimination des substances étrangères à l'organisme (of foreign substances). M. Labbé.
34 *Le levurargyre. L. Jullien.
35 L'insuffisance respiratoire: traitement par la gymnastique et la rééducation respiratoires. G. Rosenthal.
36 Report of Seventh International Congress of Otology, Bordeaux, August 1-4.
37 *Mosquitoes on Ships. J. Dupuy. Abstract.
38 (No. 65.) The Balance Sheet of Radiotherapy in Cancer. P. Desfosses and G. Haret.—Le bilan de la radiothérapie dans le cancer.
38½ *Les fausses perforations typhiques (simulated). Rochard. Abstract.
39 Recherches sur la sensibilité vibratoire. G. Marinesco.
40 (No. 66.) L'assistance médicale indigène à Madagascar. L. D'Anfreville.
41 *Du danger de la mort apparente. Icard (Marseilles).
42 La fièvre bilieuse hemoglobinurique, existe-t-elle en Algerie? Groz.
43 Report of Fourteenth French Congress of Neurology and Psychiatry, Pau, August 1-7. (Commenced in No. 65.)
44 (67.) Yellow Fever According to Most Recent Works. J. Sanarelli (Bologna).—La fièvre jaune, etc.
45 Action des rayons *x* sur le sang leucémique. E. Aubertin and E. Beaujard.
46 La cellule nerveuse normale et pathologique. Altérations histologiques des centres nerveux dans les délires toxi-infectieux des alcooliques, le délirium trémens et le délire aigu. H. Carrier. Abstract of Lyons' thesis.

28. **Indications for Dechloridation.**—Dechloridation or suppression of the ingestion of salt is merely treatment of a single symptom, the retention of salt in heart or kidney disease. But this retention has so many consequences that it is of great clinical importance, especially in Bright's disease, and also in cases of cardiac edema, ascites, hyperchlorhydria, and even in certain cutaneous affections with exudation. Javal gives the detailed history of 2 patients with severe Bright's disease under the influence of intermittent dechloridation. The curves are instructive in several respects. They show that theobromin is valuable as an adjuvant but is unable to take the place of dechloridation. Also that the milk diet is unnecessary—all that is needed is a diet free from salt. This alone will frequently accomplish all that is needed or required, and any medication is superfluous and hence more or less harmful. The changes in the body-weight parallel the fluctuations in the salt retention. Daily weighing is thus an important means of detecting slight edema and its preliminary phases, long before they become clinically evident. Abrupt increase in weight is pathognomonic of retention of salt and its retinue of fluids. Each 5 or 6 gm. of salt retained holds back with it a liter of water, equivalent to a kilogram of weight, that is, 2.2 pounds. By daily weighing we learn the exact condition of the retention of salt and can regulate the amount of salt allowed in the diet to correspond with the amount retained.

29. **Otology in the Medical Curriculum.**—Politzer's article was one of those presented to the recent International Congress of Otology, which voted affirmatively on his conclusions. These were to the effect that every faculty of medicine should have a chair of otology and that it should be made one of the compulsory branches of medical instruction.

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31. **Diet in Nephritis.**—Köster's article was published in 1903 and proclaims the necessity for a strict milk diet in acute nephritis, in case of uremic symptoms and during exacerbations of chronic nephritis. When the excretion of albumin and the sediment of the urine has attained a fixed amount, the régime can be varied without danger. He advises interposition of a few days of milk diet occasionally.

32. **Differential Diagnosis of Yellow Fever.**—Lengua comments on the difficulty of differentiating a severe case of pernicious malarial fever from fulminating yellow fever. He describes a case in which a man previously healthy suddenly developed symptoms typical of fulminating yellow fever, with the sole exception that there was no icteric aspect. This latter symptom, however, is not invariable in yellow fever. He diagnosed the case as one of pernicious malaria solely from the antecedents of the case. The fever had come on suddenly two weeks after working in a marshy field, and symptoms of tertian malaria had been noted in the interim, the health having always been good before this time. He rapidly recovered under vigorous quinin medication.

33. **Absorption and Elimination by Leucocytes of Foreign Substances.**—Among the points emphasized in this study of the rôle of the leucocytes in respect to foreign substances, we note that Maurel affirms that the amount of a poison necessary to kill the animal is the same proportion as is necessary to kill the single leucocyte. Opium paralyzes the leucocytes and prevents phagocytosis, consequently it is illogical to administer it in affections in which the co-operation of the leucocytes is desired. The leucocytes incorporate the foreign particles and digest them if possible. If not, the digestion is completed in the lymphatic ganglia where the leucocytes carry them, or the foreign particles accumulate in the ganglia if absolutely insoluble. Labbé reviews a large number of the latest theoretical and experimental researches on this subject. They demonstrate that we need not hesitate to use insoluble substances in therapeutics. They may act less rapidly, but they are utilized in time by the intermediation of the leucocytes, and, although somewhat late, their action is all the more durable. The part played by the leucocytes in draining the system of injurious substances and transporting them out of

the organism, rehabilitates the old method of fixation abscesses as a therapeutic measure of great value in certain infections and intoxications.

34. **Levuratgyre.**—This term is a combination of the words meaning yeast and mercury, and is applied to a mercurial nucleo-proteid extracted from brewer's yeast grown in a wash containing a certain proportion of bichlorid of mercury. It thus combines the properties of yeast and mercury and seems to display therapeutic action against the general cutaneous manifestations of syphilis. Jullien qualifies the clinical results obtained with this new product as very encouraging.

37. **Ships and Mosquitoes.**—Dupuy's investigations showed that both steam and sailing vessels are liable to have mosquitoes blown or brought on board. They find congenial lurking places in the cabins and hold. Mosquitoes bred on board can not be infected, but those that come on the ship in an infected port are liable to be dangerous to man. He advises that ships should dock where they would be inaccessible to mosquitoes, and also that doors and windows should be kept screened, especially toward evening. As soon as the ship is in the open sea, pyrethrum powder should be burned in the cabins, and they should be energetically aired and ventilated. The Clayton apparatus should be used in the hold, and again on arriving.

38½. **Simulated Perforation in Typhoid.**—The classic arguments in favor of operating in case of typhoid perforation are re-enforced by Rochard's experience with a case in which the assumed perforation had no existence in fact, but the laparotomy had evidently a curative action. A convalescent from typhoid suddenly presented the typical syndrome of intestinal perforation, and was operated on the third hour. The large intestine, duodenum, stomach, and gall bladder were carefully examined but found apparently sound, the only abnormal appearance being exaggerated vascularization of the transverse colon. Nothing further was done and the abdomen was sutured, the patient recovering rapidly without complications. He cites two similar cases published in France in which at the laparotomy nothing was found to explain the symptoms of typhoid perforation, except slight redness of the small intestine in one and congestion with false membranes at the ileum in the other. Rochard thinks that the congestion observed was a sign of incipient peritonitis, and that the severity of the symptoms induced was due merely to the extreme sensitiveness of the peritoneum in persons convalescing from typhoid. The uneventful recoveries in these cases, the manifest curative action of the laparotomy alone, and the inevitably fatal outcome in case of unoperated true perforation, impel to prompt surgical intervention.

41. **Danger of Apparent Death.**—Icard of Marseilles, France, has been investigating every case of resuscitation after apparent death of which he has learned during the last twelve years. The lay press frequently publishes stories of this kind, but in nearly every instance inquiry of the parties interested showed that the stories had no foundation. Even a single authentic case of burial alive should impose on the conscience of every physician the most scrupulous care before he signs the certificate of death. Icard has collected eleven cases in which the physician's certificate of death was followed by the revival of the subject later, and another case in which there was no medical opinion. The revival occurred before burial in every instance. He also knows of other cases, but they lack the strict scientific data of the series he describes in detail. In one case the revival occurred in the mortuary room of a German city where the dead are kept by law until evident signs of putrefaction. He includes in the list an instance personally observed. A woman had taken lodgings at a hotel and sent for her lawyer to change her will. He arrived and went to her room with a bell boy. There was no reply to their knock, and when the door was opened she was found inert and insensible in the bed, the body cold and the limbs rigid. The police were notified, the family informed, and Dr. Icard was sent for to deliver the certificate so that the corpse could be removed. When he arrived, the hotel-keeper met him, grumbling at his delay, and urging him to sign the certificate at once, as the presence of a corpse in the hotel was ruining the business. Icard found some warmth in the body, and perceptible but very faint heart beat, and the patient was soon revived. Hotel-keepers are in such haste to hurry a corpse out of the building that they are liable to antedate the hour of death, and the physician should be on his guard especially in such cases. In another instance the physician attending a prominent citizen was convinced that death had arrived and so notified the family circle. The patient had long suffered from gangrene and chronic arteritis, and in the presence of the physician all the manifestations of life gradually ceased and he was declared dead. Twenty minutes later faint signs of respiration were detected, and the physician's stimulating measures restored him to life. Death occurred finally forty days later. In another case the attending physician had signed the death certificate, which was countersigned by the priest. The latter returned the next day to see the sick daughter of the deceased, and in passing through the room where the corpse lay on the bier he noticed unmistakable signs of life, and assisted in the woman's restoration. The details of each of these twelve cases are given with names, addresses and dates. In conclusion, Icard presents the provisions of the laws in France in regard to the certification of death. They are very prudent and conservative, but are practically a dead letter, never being enforced according to the spirit of the regulations. They provide for careful examination of the subject before the certificate of death is signed by the registered physician, and he must wait for cadaveric rigidity and putrefaction before he signs. The legal interval of twenty-four hours before burial is permitted should commence from the moment when the authorities are notified of the death, and not from the moment of supposed death. Until the expiration of the twenty-four-hour interval the subject should be regarded as a sick person and not as a corpse, and treated as such. The public authorities urge that every family should be instructed in the care to be given the subject until the complete expiration of the legal interval. This interval may be shortened in certain cases on condition that the death has been certified with the greatest care, and that it is known to be real and not apparent. Icard's study of the subject in other lands besides France shows him that death certificates are liable to be signed haphazard by physicians anywhere, sometimes without actual inspection of the supposed corpse. He mentions one instance in which the certificate was signed blank and left with the mother of a sick child, for her to fill in the exact hour of death and forward to the authorities. Icard has this blank certificate in his possession and regards it as a monument of inexcusable carelessness. He cites Brouardel to the effect that 3 instances at least are known in which apparent death lasted a long time, but the supposed corpses were finally restored to life. The subjects he mentions are the men hung at Boston and Perth, and Roger's case of revival after burial. Apparent death is life under the external aspect of death. Every dying person passes through this phase before death is finally complete.

Semaine Médicale, Paris.

47 (XXIV, No. 32.) Editorial Comment on Jacob's Pulmonal Infusion.—De la sincérité dans les observations médicales et des limites de l'expérimentation thérapeutique. See page 557.

48 *Le chylothorax traumatique. F. Munch.

49 *Report of Fourteenth French Congress of Neurology and Psychiatry, Pau, August 1-7. (Commenced in No. 31.)

50 (No. 34.) *Les formes cliniques du cancer de l'estomac. L. Bard.

51 Des troubles cardiaques tardifs consécutifs aux angines. P. Busquet. Abstract.

52 Hetérotopie thyroïdienne. E. Tavel. Abstract.

53 Etude des abcès du foie chez l'enfant (liver abscess in children). Corvington. Abstract.

48. **Traumatic Chylothorax.**—Four of the 10 cases of traumatic chylothorax on record terminated fatally. In 2 cases the effusion was spontaneously reabsorbed. Others recovered after nine or ten punctures, and death in the fatal cases seems to have been due principally to the large amount of fluid—six or seven liters—found in the pleura, actually suffocating the patient. Aspiration is not always successful, however, one subject succumbing from inanition after the tenth puncture.

Port has reported excellent results from thoracotomy in one case, and it is quite a question whether immediate thoracotomy is not the preferable procedure when the diagnosis of traumatic chylothorax is once definitely established.

49a. **Localization of Motor Functions in Spine.**—This was one of the subjects on the order of the day at the recent neurologic congress. Addresses were presented by Sano of Antwerp, Grasset of Montpellier, and Parhon of Bucharest. They emphasized the fact that much further study is needed on this subject, and also that the various theories proposed are all too exclusive.

49b. **The Criminal Insane.**—After long discussion of this subject the congress adopted resolutions asking for the creation of special asylums for the particularly dangerous insane as an urgent necessity. This would include the criminal insane.

49c. **Mode of Arresting Epileptic Seizure.**—Crocq of Brussels has found that the clonic spasms can be suppressed and the consciousness restored by placing the epileptic on his left side during the tonic period. This method of arresting the seizure was first proposed by McConaghey of Edinburgh, and Crocq has found it successful in every instance in which he has applied it.

49d. **"Combined Plantar" Sign of Hysteria.**—The same author calls attention to the simultaneous abolition of the cortical plantar reflex or flexion reflex, and of the spinal plantar reflex or fascia lata reflex, which he calls the "combined plantar reflex." He regards its abolition as pathognomonic of hysteria.

49e. **Radium in Nerve Therapeutics.**—Foveau de Courmelles describes numerous experiences to show the great sedative power possessed by radium. It soothes pain, whether organic or cancerous, nervous or neuralgic. Some cases of facial neuralgia and one of sciatica, long rebellious to other measures, yielded to the action of the radium rays. The girdle pains in 2 cases of ataxia were cured, one by the radium and the other by the Röntgen rays. The subjects were not informed in regard to the nature of the treatment, so he thinks that suggestion may be excluded.

49f. **Sodium Nitrite in Tabes.**—Oberthur has cured the pains in rebellious cases of tabes by sodium nitrite given by mouth or subcutaneously.

50. **Clinical Forms of Cancer of the Stomach.**—Bard proposes tentatively a classification of gastric cancers which he thinks will aid physicians in prognosis and in their decisions, and will improve the results, both immediate and remote, of surgery. He divides the 3 main groups, pyloric, extra-pyloric and subperitoneal cancers, into the subgroups of typical, abortive and latent. The abortive forms are the most puzzling. In the pyloric group it includes the annular, colloid cancer, inducing insufficiency of the pylorus instead of stenosis. The latent form includes the submucous cylindroid cancer or Brinton's plastic linitis, which substitutes esophageal symptoms for the ordinary pyloric ones. The abortive form of extra-pyloric cancer includes the painful dyspeptic form (generally an ulcer-cancer at some distance from the pylorus), and the cachectic form without gastric phenomena. The latent form of extra-pyloric cancer includes the variety simulating pernicious anemia, generally owing to frequent slight hemorrhages, and the variety inducing symptoms of stenosis. The cancer in the latter case may be near the cardia, and the secondary stenosis may simulate cancer of the esophagus, or it may be gastro-colonic, simulating cancer of the colon and terminating in a gastro-colonic fistula. It may, further, be the cancerous form of hour-glass stomach, or it may be a gastrohepatic cancer with extensive perigastric adhesions, fixation of the liver and effacement of the stomach from a longitudinal stricture, simulating a chronic subhepatic peritonitis. The latent form may induce early and predominating symptoms in remote organs, either in the liver, simulating primary cancer of the liver or cirrhosis, or it may assume a peritoneal form, simulating tuberculous peritonitis or portal cirrhosis. The subperitoneal form is very rare. There is usually a palpable tumor, and the symptoms all indicate peritonitis without apparent participation of the stomach. Secondary cancers in the stomach generally occur in this locality. He has observed several of this kind of thyroid, and some of ovarian origin. He urges that the statistics of cancers operated on should be classified according to this or some similar plan. By this means it would be possible to learn which forms are legitimate subjects for intervention, and which are best left alone. He is convinced that operative results will be found particularly encouraging in certain cases of scirrhous annular pyloric cancers, in ulcer-cancers, in the extra-pyloric variety of the dyspeptic type and in plastic linitis, no matter how extensive. He reviews in detail the indications for the various palliative and radical operations, concluding with the remark that the latent gastro-colonic variety of cancer might suggest benefit from an artificial anus, but this would entail only disappointment.

Berliner klinische Wochenschrift.

54 (XLI, No. 32.) Fall von familiärer Tabes dorsalis auf syphilitischer Basis. Tabes bei der Mutter und ihren zwei hereditär syph. Töchter (mother and 2 daughters). M. Nonne.

55 *Polymyositis und Polyneuritis bei Morbillen (measles). W. Jessen and F. Edens.

56 Das Rhinophyma und deren operativen Behandlung. S. L. Bogrow (Moscow).

57 Fracture of Neck of Femur in Child. R. Lammers.—Fall von Schenkelhalsfraktur beim Kinde.

58 Belladonna Poisoning in Ophthalmic Practice. J. Fejer (Budapest).—Ueber Belladonnavergiftungen in der augenärztlichen Praxis.

59 (No. 33.) *Stones in Gall Bladder and Their Treatment. Franz König.—Steine in der Gallenblase und deren Behandlung.

60 *Recent Progress in Dentistry. Warnekros.—Ueber neuere Fortschritte in der Zahnheilkunde.

61 Metastatische Sarkomatose der Lungen mit Epikrise, diagnostiert auf Grund des mikroskopischen Befundes der Primärgeschwülst. S. S. Burt (New York.)

62 *Weitere Erfahrungen zur Scopolamin-Morphin-Narkose (further experiences). B. Korff (Freiburg).

63 (No. 34.) *Talma Operation. S. Talma (Utrecht).—Chirurgische Oeffnung neuer Seitenbahnen für das Blut der Vena Portæ.

64 Follicli und Erythema induratum Bazin. A. Alexander.

65 The Art of Increasing or Diminishing the Body Weight at Will. M. Einhorn (New York).—Die Kunst das Körpergewicht nach Belieben zu erhöhen und zu erniedrigen.

66 *Important Roentgen Findings in Case of Shot in Eye. A. Kohler.—Schrotschuss ins Auge.

67 Electro-diagnostische Untersuchungen mit Condensatoren-Entladungen (examination with condenser discharges). L. Mann (Breslau). (Commenced in No. 33.)

55. **Polymyositis and Polyneuritis in Measles.**—Jessen describes in detail a case of measles diagnosed the sixth day. The sixteenth day the symptoms indicated acute articular rheumatism, but these rheumatoid manifestations were evidently the first indications of a severe, acute polymyositis, which he attributes to the measles. Edens describes a case of polyneuritis due to measles. The illness began with stormy onset, soon complicated by bronchopneumonia, and later with otitis media, followed by the polyneuritis. He knows of only one other case of polyneuritis due to measles on record.

59. **Treatment of Stones in the Gall Bladder.**—König reports the operative treatment of the milder forms of cholelithiasis requiring surgical intervention, as practiced at the Charité clinic. He describes 7 cases to show the variety of operations devised to meet individual indications.

60. **Hygiene of the Teeth.**—As recent progress in dentistry Warnekros describes electrolysis to prepare a tooth for filling. A current of from 1 or 2 milliamperes is passed through the tooth, wet with salt solution, for five minutes; a temporary filling is applied and the electrolysis repeated a few days later. This sterilizes the tooth completely, ready for the filling. The bactericidal action is due to the generation of nascent chlorin and oxygen at the positive pole. He advises the alternate use of hard and soft tooth brushes, of varying shapes. The use of a single brush or of a single shape causes certain parts of the teeth and gums to be unduly scrubbed and others neglected, with abrasions in some parts. Energetic use of the teeth in chewing is the best mode of cleansing them. He urges physicians to order their patients in prolonged illness to chew some indifferent substance, and in all cases to chew vigorously. The spectacle of a neglected mouth, a hot-bed for bacteria, which is so frequently observed in the sick, would become rarer. He also advises physicians to order more solid food for children who still have their first dentition. The best plan

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for the development of the teeth would be to have weakly children always given hard, black bread, but as this is impracticable, hard slices of chocolate or the like might be used to advantage. This might hasten the decay of the milk teeth, but would aid in the strong development of the permanent teeth. He observed in Egypt that the first dentition suffered from caries, but that the permanent teeth were much more perfect than among corresponding European children. He attributes this soundness of the permanent teeth to the constant practice of sucking and chewing sugar cane. It does not prevent the decay of the milk teeth, but insures stronger permanent teeth. He pays a high tribute to American dentistry, remarking that America still leads the world in dentistry in the present as in the past. In conclusion, he urges the general adoption in hotels, depots and other public places and private houses of cuspidors fashioned on the principle of dentists' basins with a rinsing jet of water. Prohibition of spitting in public places, and the uninviting aspect of the cuspidors now in use may lead to the swallowing of infectious saliva or sputa. Dentists will gladly co-operate with surgeons and hygienists and others in this and similar questions, and their advice may frequently prove very valuable.

62. **Further Experiences with the Scopolamin-Morphin Narcosis.**—Korff summarizes the results observed in 200 cases of this narcosis. In the dosage he uses (see THE JOURNAL, xli, page 1568), it is free from danger to heart or lungs. No disturbances on the part of kidneys, liver, digestive tract, etc., have ever been observed. The general practitioner can employ it without a special anesthetist. The action of the narcosis varies with different individuals. Sometimes a further dose of .0002-3 gm. scopolamin and .005 to .01 gm. morphin may be required, or chloroform or ether. The chief advantages are the absence of the tendency to vomit during and after the operation. Also that fluids can be ingested immediately before the narcosis and directly afterward. The precaution must be observed not to allow the tongue to fall back and obstruct the breathing, especially in toothless subjects, during the profound sleep during and after the operation, the result of the narcosis. Drawing the lower jaw forward draws up the tongue and obviates this danger.

63. **Talma on the Talma Operation.**—Three questions are discussed in this communication: Does the collateral deviation of the blood induced by the operation affect cirrhosis of the liver favorably? Can the omentopexy reduce the danger of hemorrhage from the overfilled veins? and can the establishment of collateral circulation in case of portal thrombosis compensate the worst of the circulatory disturbances? Talma reports experiences which compel an affirmative answer to the first two questions. In respect to the third question, he cites a case of pronounced phlebo-sclerosis of the portal vein, the probable cause of the thrombosis observed. It is the only case of which he has knowledge from which an opinion can be formulated in regard to the significance of omentopexy in case of occlusion of the portal vein in man. The patient was a man of 50, who had been subject for fourteen years to atrophic, annular cirrhosis of the liver, with ascites but no icterus; attacks of violent pain from fibrous splenitis and caput Medusæ. Omentopexy was performed, and for two months the patient was free from ascites. The collateral vessels became much enlarged at the point of attachment and around the esophagus. Then the ascites recurred from portal thrombosis, a consequence of old phlebo-sclerosis and partial occlusion of the portal vein with an old organized thrombus. In Umber's case the portal vein had been congenitally occluded, and likewise the splenic vein, but the collateral circulation had always been sufficient, and no disturbances had been noted. The liver was sound. The omentum was adherent to the liver, kidneys, spleen, intestines and abdominal wall, and there were numerous adhesions between the intestines, etc. The occlusion of the portal vein was a necropsy surprise, the collateral circulation having obviated all disturbances until fresh thrombosis occurred in the collateral circulation. The conclusions which Talma draws from this and his own case are that it is a good plan to make the omentopexy multiple, that is, to fasten the omentum at several points. Another case of recent thrombosis in an old phlebitis has recently been described in Holland, remarkable on account of the hyperemia of the abdominal wall and the development of wide veins at the points where the spleen and diaphragm had become adherent. Stephan has also reported a case of acute thrombosis of the portal vein followed by fatal necrosis of a large part of the intestines. Comparing the findings in this case with those in the case of long-established occlusion of the portal vein, shows better than any words the importance of collateral side routes circulation for the blood in case of liver cirrhosis.

66. **Radiogram of a Shot in the Eye.**—Köhler obtained a good radiogram of the shot, but when the subject looked upward the rays cast shadows of two pieces of shot, when in fact there was only one. This confirmed the assumption that it was located in the eyeball.

Deutsche medicinische Wochenschrift, Berlin and Leipsic.

68 (XXX, No. 32.) *Das Trauma als Aetiologie bei Aortenklappen Insuffizienz. F. Sinnhuber (Berlin).
69 Fate of Nucleinic Acid Introduced into Circulation. A. Schittenhelm and E. Bendix.—Schicksal der in die Blutbahn eingebrachten Nukleinsäure.
70 *Ueber Misch Infektion durch Typhus- und Paratyphus-Bazillen. H. Conradi.
71 *Ueber die chirurgische Behandlung der otogenen eitrigen Cerebrospinal-Meningitis. E. P. Friedrich (Kiel).
72 *Ein neuer Gesichts-Punkt bei der Behandlung der Aphonia spastica. E. Barth (Frankfurt a. O.).
73 Zum 70 Geburtstag von Ewald Hering (seventieth birthday). P. Grützner.
74 (No. 33.) Zur Typhus-Diagnose. K. Walter.
75 *Ueber aktive Immunisierung des Menschen gegen Cholera. E. Bertarelli.
76 Ueber die Agglutination des Milzbrand-Bacillus (anthrax). A. Carini.
77 *Beiträge zur Methodik der klinischen Stuhluntersuchung (examination of stools). E. v. Koziczkowsky.
78 *Der heutige Stand der Neuron-Theorie. A. Bethe.
79 *Diabetes insipidus, behandelt mit Strychnin-Injektionen. B. Leick.
80 Gout in Boy from Infancy. R. Lunz (Moscow).—Fall von Gichterkrankung bei einem 7 jährigen Kinde.
81 *Mein 60 bronchoskopischer Fremd-Körper Fall. G. Killian.
82 *Ueber eine neue Methode der Behandlung der chronischen Urethritis. H. Lohnstein.
83 Xiphophagus Duplicitas parallela. H. Singer. (First part in No. 27.)
84 Progress in Appliances for the Care of the Sick. P. Jacobsohn.—Fortschritte der Krankenpflegetechnik.

68. **Trauma in Etiology of Aortic Insufficiency.**—Sinnhuber thinks that far too little attention has been paid hitherto to trauma as a factor in the production of valvular affections. The text-books suggest it only as a bare possibility, and very few instances have been published, among them Hektoen's case (1892) of rupture of the aortic valves. During the last year and a half Sinnhuber has had occasion to observe 3 cases at the Berlin Charité in which the symptoms of aortic insufficiency were traceable to a contusion or fall on the chest. Two of the patients applied for relief without referring to any traumatism in their antecedents, and it was only learned by direct questioning. The particulars are detailed, and also the post-mortem findings in a fourth case. The latter was diagnosed as traumatic aortic insufficiency, but the necropsy revealed merely a chronic, recurring endocarditis. The patient was a man of 38, previously healthy, whose business was the moving of safes. With 8 other men he had carried a very heavy safe up a flight of stairs, then walked a mile home and slept for several hours. When he awoke he experienced progressive dyspnea, and the next day much pain in the abdomen and in the region of the stomach, and vomited all that he ingested; the vomitus was blood streaked. The dyspnea became so excessive that he entered the hospital the tenth day. Traumatic aortic insufficiency was diagnosed, but the necropsy revealed merely chronic, recurring endocarditis. Notwithstanding these negative findings in this case, Sinnhuber thinks there can be no mistake in the diagnosis of the 3 other cases. One man had been devoted to athletics and had been found perfectly sound when examined eleven months before the accident, while four weeks after, a severe heart defect was discovered. He presented the symptoms of severe aortic insufficiency, with hypertrophied left ventricle, and other symptoms visible even from a distance. The second patient was a cabinet-maker of 42, who had worked steadily until the accident. Two months afterward he was unable to work at all on account of symptoms

suggesting aortic insufficiency. A year and a half later his heart measured 22 cm. at the base (over 8.5 in.). In the third case a history of malaria eight years, and of gonorrhea one year before suggests the possibility of endocarditis *ad valvulas aortæ*. But the man had been apparently in good health when the trauma occurred, and it was followed by a stormy onset of dyspnea, unbearable beating of the vein trunks, symptoms of distress, suffocations and other signs of the severest aortic insufficiency, compelling the diagnosis of a traumatic valvular affection.

70. **Mixed Typhoid and Paratyphoid Infection.**—A child ate pieces of ice from a pond known to be infected with typhoid and paratyphoid bacilli. She developed an irregular fever, enlargement of spleen, roseolæ, mild intestinal disturbances and retarded heart action, suggesting an atypical typhoid. Typhoid and paratyphoid bacilli were found growing on agar plates inoculated from the stools on the fifth day. Conradi further describes an epidemic at Metz in which typhoid bacilli were isolated from the stools of certain patients and the paratyphoid from those of others. The attending physician was examined and, although he was and remained in the best of health, both typhoid and paratyphoid bacilli were isolated from his stools. They were not numerous, merely from three to five on each plate. They were unmistakably derived from contact infection, but the agglutination test was always negative in his case.

71. **Surgical Treatment of Otogenous Suppurative Cerebrospinal Meningitis.**—Friedrich advocates operative treatment of otogenic suppurative arachnitis by opening up the cranial cavity and subarachnoid space combined with a counter-opening at the lowest point of the spinal canal. He has thus operated in 2 advanced cases, but was unable to avert the fatal termination. It might prove a very valuable measure, however, he thinks, for the isolated basal and spinal form of suppurative cerebrospinal meningitis of otitic origin, if taken in time. The lesion here is, in fact, a kind of phlegmon of the posterior cranial fossa with involvement of the ventricle, basal cisterns and spinal arachnoid sac, while the convexity of the cerebrum is not affected. Such an affection is usually a gradually progressive, chronic involvement of the arachnoid and pia. In its insidious course the pus collection becomes localized and encapsulated. Here belong the cases of chronic otitis media, especially those of cholesteatoma formation. The anatomic findings in his 2 cases confirmed the assumption of a localized pus collection in the basal and spinal subarachnoid spaces. Why should we not apply, he asks, to irritated meninges the same surgical principles which we employ so successfully in purulent peritonitis? After the laminectomy and opening of the arachnoid the fluid must not be withdrawn too rapidly by the lumbar puncture below. A tampon should be applied to soak up very slowly the pus-containing cerebrospinal fluid. With these precautions he has never had any mishaps occur from lumbar puncture in a single instance in his extensive experience with it, even when as much as 15 c.c. are withdrawn at a sitting. It is not enough to drain away the fluid and pus; the thick pus is liable to collect and adhere to the spinal canal and must be rinsed out. Cordero has demonstrated experimentally the feasibility of such a procedure, substituting the natural fluid with salt solution. He found it possible to send from 10 to 40 c.c. through the spinal canal without eliciting nervous symptoms. If this rinsing out of the spinal canal seems too hazardous, the re-formation of cerebrospinal fluid might be promoted by intramuscular injections of salt solution. Friedrich's experience seems to indicate that the first symptoms of the affection in question—a localized endocranial pus collection—are those of serous meningitis. The high temperature indicates the toxic character of the exudate and the rigid muscles at the back of the neck, with the absence of symptoms of brain irritation, aid in localizing the inflammation at the base. When lumbar puncture fails to demonstrate any permanent benefit, laminectomy is in order, but it is too late for it when the bacteriologic and cytologic findings of lumbar puncture indicate that the entire arachnoid sac is diffusely suppurating. [At the International Congress of Otology, held at Bordeaux in August, Lermoyez and Bellin of Paris reported 2 cases in which surgical treatment was applied in otogenic meningitis, with the complete recovery of the patients. The first was a young woman long subject to otorrhea. After a month of vague general disturbances symptoms of acute diffuse meningitis developed: Intense headache, rigidity of the muscles of the back of the neck, facial paralysis and Kernig's symptom. Lumbar puncture showed 58 per cent. lymphocytes and 40 per cent. polynuclears. The carious petrous bone was widely opened up, the wall of the labyrinth found necrotic, the dura fungous. The temperature returned permanently to normal the next day, but the Kernig symptom persisted several days longer. The lumbar puncture was repeated a week later, and the lymphocytes were found very numerous, but scarcely 1 per cent. of polynuclears. In two weeks the fluid was entirely normal. The circumstances were similar in the second case, but the trouble was more protracted. The first patient was cured by merely an ample craniectomy, relieving the compression. In the second case actual drainage had to be established both by the cranial and the spinal routes. The meningitic symptoms reappeared twice after a few days' interval of peace. In both cases the infection had spread to the meninges from pyo-labyrinthitis, but a cure was obtained without trephining the labyrinth, leaving to Nature the task of eliminating the sequestrum in the labyrinth. This was successfully accomplished in time, although it delayed the healing for several months in the second case. The cure has been complete and permanent for eighteen months in the first and for eight months in the second case. Neither of the patients display any evidences of impaired equilibration.—ED.]

72. **New Standpoint for Treatment of Spastic Aphonia.**—Barth noticed certain indications which convinced him that spastic aphonia is a disturbance in co-ordination. The muscles forget their co-ordinating action, and by mechanically restoring this action the idea of the co-ordination is rearoused in the brain and transmitted to the muscles. He describes a few cases treated on this principle with surprisingly favorable results. He interposes a sound or the endolaryngeal electrode between the arytenoid cartilages. Normal tones were produced at once and the aphonia was conquered in some cases permanently, while others required daily repetition of the co-ordination exercise for a few days. The success depended usually on the duration of the aphonia.

75. **Active Immunization Against Cholera.**—Bertarelli's research has confirmed the value of the Shiga method of immunization by injection of free receptors. After positive results on rabbits and guinea-pigs he tried it on himself with equally positive results. The degree of immunization is very small and the amount of receptors required is too voluminous at present. The technic will have to be modified to obtain a higher degree of immunity with more concentrated material before it can be generally adopted.

77. **Clinical Examination of the Stools.**—This article issues from Senator's clinic and describes the methods in vogue there. The repeated finding of invisible blood in the stools seems to be pathognomonic of cancer, as in case of ulcer the occult bleeding is more erratic and intermittent. The blood occurs during exacerbations and vanishes as the ulcer heals. Blood was frequently found in the feces in cases of hypersecretion without positive clinical signs of ulcer. These occult bleedings are a valuable means of differentiating ulcer from nervous gastralgia, cholelithiasis, etc., and also for the discovery of gastrointestinal cancer inaccessible to palpation. The aloin test has proved much more reliable than the guaiac test (see THE JOURNAL, xli, p. 1566). No food or medicine containing blood should be taken, and articles containing chlorophyll or iron should also be avoided. The diet should be restricted to milk, flour, bread, eggs, fruit and not too much fat. The sample of stool should have the fat extracted by evaporating on the water-bath and then extracting with ether. It is sometimes advisable to rub up a dark stool with considerable alcohol and then filter it out to remove the urobilin. After the fat is removed the stool is digested with glacial acetic acid

for a minute or two, poured into another vessel and extracted with a small amount of ether. For 5 gm. of stool 5 gm. of acetic acid and 5 to 10 c.c. of ether are the usual proportions. Over the filtered or unfiltered mixture is then poured, from a graduated pipette, 1 to 1.5 c.c. of ozonized turpentine, and above this about .5 c.c. of a fresh 2 to 3 per cent. solution of aloin. The most convenient technic is to have .3 gm. of pulverized aloin on hand and dissolve it in 10 c.c. of a 65 to 70 per cent. alcohol. On the above diet repeated positive findings of this test may be confidently accepted as evidence of occult hemorrhage, in the absence of other known sources of the blood found. The technic of determining the albumin residuum in the feces is also described, and the determination and clinical significance of the length of time in which the food remains in the digestive tract. It is astonishing that so little attention has been paid to this latter point from the diagnostic point of view. A test diet is given, five meals during the day, the totals consumed being 1.5 liters milk, .25 liter bouillon, 6 zwieback, 40 gm. oatmeal, 40 gm. butter, 2 eggs (80 gm.), and 200 gm. soft mashed potato. He demarcated this test diet with .5 gm. carmin given just before it was commenced. He found that it remained in the digestive tract from fifteen to twenty-five hours in subjects free from appreciable intestinal disturbances. In pathologic cases the shortest interval was four hours, and in such cases the sublimate test for transformation of bilirubin into urobilin in the feces was negative. He accepts as the standard unit the time from the commencement of the diet to the appearance of the first red-stained stool—the German term *Verweildauer* being used to express this standard interval. The author recommends this simple technic as a valuable method for obtaining information in regard to the intestinal functions and disturbances in them. The findings are destined to throw light on many questions which have hitherto been merely vague surmises. The alkaline or acid reaction of the stools is determined by adding a small portion of the stool to one of two wide-mouthed reagent glasses containing equal amounts of a 10 per cent. aqueous litmus tincture. Comparing the glasses by daylight will readily show the alkaline, neutral or acid reaction.

78. **Present Status of the Neuron Theory.**—Bethe relates the particulars of recent research on the finer structure of the nerve elements, especially in the lower forms of life. His article is illustrated, and he remarks in conclusion that he does not understand how any one who reviews the material therein presented can fail to become convinced that the neuron theory is played out. The neuron is not a cellular unit. A fibrillar anastomosis between the various neurons is unmistakably established in crustacea and is more than probable in man. Recent embryonal and histologic research has established that at least the axis cylinders of the peripheral nerves are of multicellular origin. It is very probable that, besides the neuron-complexes, there are other nerve elements genetically independent of them. The term neuron should be retained, but not the meaning hitherto ascribed to it. We must understand that these complexes do not make up the entire nervous system, that they do not exist in the nerve network, that they are not morphologically of equal value, that they are not units either from the trophic or physiologic point of view, and that they shelter guests, the neurofibrils, whose origin is still a mystery.

79. **Strychnin in Diabetes Insipidus.**—A man of 49, previously healthy, developed a typical diabetes insipidus after a severe concussion of the nervous system. Strychnin was administered—fifteen injections during twenty days—a total of .0905 gm. strychnin nitrate. The urine subsided from a daily 8,000 c.c. to 3,400 c.c. The strychnin was discontinued on account of symptoms of intoxication, but the urine continued its downward course to 2,400 and 1,700 c.c. and the patient is apparently cured. The density of the urine remained uninfluenced by the strychnin. It ranged from 1,007 to 1,002. The persistence of this figure for the specific gravity forbids the assumption of a complete cure, but the subsidence of all the symptoms certainly justifies further trials of strychnin in such cases.

81. **Bronchoscopy.**—Killian reports the sixtieth case of extraction of a foreign body under bronchoscopy. He does not understand why it is not more generally adopted. "Why make a hole through the wall to get into the house when a wide front door and spacious steps are at our disposal?"

82. **New Instrument for Treating Chronic Urethritis.**—The instrument looks like a sound with two openings near the tip. After it is inserted in the urethra, by turning a thumbscrew in the handle, two small curette spoons merge from the two openings, spreading apart from each other at an angle of 45 degrees more or less. A graduated scale in the handle shows the exact distance between the tips of the curettes. The aim is to spread them to distend the walls of the urethra and by moving them just as much as can be done without causing pain, twisting and working the instrument, to curette the walls and evacuate the adjoining glands, combined with a sort of massage of the parts. Lohnstein has used the instrument in 26 cases and found that it more than fulfilled all his anticipations. It was particularly useful for the removal of polyps and other excrescences, and in case of infiltrations and chronic follicular urethritis.

Münchener medicinische Wochenschrift.

85 (LI, No. 32.) •Heart Disturbances in Scarlet Fever. Schmaltz.—Herzstörungen beim Scharlach und ihre Folgen.
86 •Comparative Study of Hydrochloric Acid, etc., in Stomach Troubles. S. Heichelheim and H. Kramer.—Vergleichende Untersuchungen über die Wirkung von Salzsäure, Salzsäure Pepsin und Gasterine bei Hypochylia und Achylia gastrica.
87 •Physiologic Action of Natural Gastric Juice (pigs). W. Erb.—Ueber die physiol. Wirksamkeit des "natürlichen" Schweinemagensaftes (Dyspeptine Dr. Hepp).
88 •Pressure in Auricle in Valvular Defects. A. Horner.—Ueber den Vorhofdruck bei Klappenfehler.
89 2 Cases of Bullet Wounds of Brain. A. Schott.—Zwei Fällen von Schussverletzungen des Gehirns.
90 Zur Kasuistik der Perinealen Luxationen. F. Selderer.
91 Einfaches Modell einer Milch-Pumpe (breast pump). H. Koeppe (Giessen).
92 •Congestion and Age in Origin of Tumors. R. Rössle (Kiel).—Die Rolle der Hyperämie und des Alters in der Geschwulstentstehung. (Commenced in No. 31.)
93 Superstition Before and During Childbirth. A. M. Pachinger.—Der Aberglaube vor und bei der Geburt des Menschen.

85. **The Heart in Scarlet Fever.**—Schmaltz emphasizes the necessity for rest in case of scarlatinal heart complications. He cites a number of examples from his own experience to illustrate the danger of allowing demands to be made on the heart before it is entirely restored. He never witnessed a case of death from these heart complications unaccompanied by sepsis or nephritis, but in 29 cases the cardiac symptoms persisted at the time the patient was dismissed. In 15 there were evidences of mitral insufficiency, in 9 merely a systolic murmur, and in 2 marked dilatation without murmurs was noted as late as the fifty-first and sixty-second day. Examination of these patients later disclosed permanent mitral insufficiency in 16. In 5 of this number the cardiac defect had caused insignificant symptoms during their stay in the hospital, which had become aggravated later. In 5 of the patients with pronounced cardiac defects at this later examination there had been nothing abnormal when they had been dismissed from the hospital. In only 3 of the patients had the heart disturbances noted on dismissal retrogressed later. The interval had been from six months to five years. These experiences indicate that scarlatinal heart affections entail permanent heart disturbances more frequently than the diphtheritic, and they seem to be more serious, although never directly fatal. In 33 cases that came to autopsy, recent changes in the valves were discovered in only 3. The disturbances are evidently due to myocardial changes. Greater attention should be paid to the heart in and after scarlet fever. Prolonged rest for the heart and possibly local application of the icebag are indicated. He never derived any appreciable benefit from digitalis in these cases.

86. **Natural Gastric Juice and HCl in Stomach Affections.**—Eleven patients at Riegel's clinic were treated with hydrochloric acid or a combination of the same with pepsin or with gasterine, or dyspeptine, a natural gastric juice. Comparative study of the results shows that gasterine has a favorable action on the digestion of the meal with which it is given, provided as much as 100 to 150 c.c. is given, but it is no more effective than hydrochloric acid alone or in combination with pepsin. The HCl has a pronounced action in stimulating the

secretion of pancreatic juice and possibly also of the bile. The conclusions are all favorable to the administration of hydrochloric acid, both transiently and continuously, in addition to dietetic measures, in all cases of hypochylia or achylia gastrica when the appetite is depressed, and there are fermentations in the stomach, with diarrhea. The digestive power was wonderfully increased, in many cases by giving from 100 to 300 c.c. of a one-tenth normal hydrochloric acid solution. When pepsin was added it was in the proportion of 5 gm. to 100 c.c. of the same. Some of the patients drank the solution through a glass tube; others had it introduced through a stomach tube. None complained of the taste.

87. **Physiologic Study of Natural Gastric Juice (Pigs).**—Erb argues that the gastric juice derived from pigs by a Pawlow fistula can never be a physiologic secretion. The operative intervention renders it always more or less pathologic.

88. **Pressure in the Right Auricle in Valvular Defects.**—Horner has been giving the Gaertner test a thorough trial on healthy subjects and on those with valvular defects. It was described in these columns, page 687 of vol. xlii. The arm is lifted slowly and passively, and the point at which the veins collapse is marked by comparison with the standards Gaertner has established. Horner's tests confirm the great value of this new technic, with certain restrictions. He reports a number of cases of mitral incompetency, etc., to show the characteristic findings in various valvular defects.

92. **Role of Hyperemia and Age in Origin of Tumors.**—Rössle proposes a theory to account for the origin of tumors by variations in the cells of the organism caused by age and congestion. Histologic and physiologic study of old age is the most promising line for research on the origin of malignant cancer.

Gazzetta degli Ospedali, Milan.

Last indexed page 850.

94 (XXV, No. 49.) Alopecia areata in seguito a trauma. V. Ramazotti.
95 *Infezione puerperale ed iniezioni endovenose di sublimato corrosivo. G. Fabio.
96 *Contributo alla cura della pneumonite crupposa colla digitale ad alte dosi. A. Amucano.
97 (No. 52.) Intorno alla radio-activita dei fanghi e delle acque di Abano. De Giovanni.
98 *Deli' importanza della siero-agglutinazione nella diagnosi precoce della tubercolosi primitiva dell' orecchio medio (of middle ear). A. De Simoni.
99 Study of Bullet Wounds of Brain. A. Amantini.—Contributo allo studio delle lesioni cerebrali per ferita d'arma da fuoco.
100 (No. 53.) Contributo alla setticemia pura da tetragono. U. Baccarani.
101 Il reflesso di Babinski. S. Ceraulo.
102 *Limitazione dell' area cardiaca mediante il palpamento. G. Bassi.
103 Contributo alla splenoplessia. A. Ceccherelli.

95. **Sublimate in Puerperal Infection.**—Fabio describes a case of severe puerperal infection, apparently in the last stages when first seen. He injected intravenously 3 mg. of a 1 per thousand solution of sublimate, with local measures. The temperature declined a little the same evening and there was slight abatement of the symptoms. Six intravenous injections were thus made in the course of a week, after which the patient was soon restored to health, an extensive ulceration of a laceration of the vagina having healed completely. Bidoli has recently published a similar case of recovery under sublimate as a last resource (*Policlinico*, July 9). The patient was apparently moribund.—Ed.]

96. **Digitalis in Croupous Pneumonia.**—The patient had previously passed through four attacks of croupous pneumonia between the ages of 16 and 33. They had been treated by the ordinary measures, with the usual protracted course. At 34 another attack occurred and 3 and 4 gm. of digitalis leaves were infused and administered on following days. The disease was arrested and recovery rapidly ensued, in marked contrast to the preceding attacks, and notwithstanding the fact that the onset had been stormy. Digitalis evidently has different effects on a healthy and a pneumonia subject. It may have some specific bactericidal action on the causal germ, or the intense leucocytosis induced may have the same result, or the leucocytes may be rendered more resistant. Carbone insists that pneumococcus infection is due to an intoxication of the system by absorption of the products of the elements of the blood, destroyed by the pneumococci. If this be true, then treatment with digitalis, to enhance the resisting power of the leucocytes, is the logical indication, and experience is crowning it with success.

98. **Sero-Diagnosis of Primary Tuberculosis of the Middle Ear.**—De-Simoni cites 3 cases to show how valuable the agglutination test may prove long before other signs are available. He tabulates the findings in 14 other cases in which the test was negative, and the course of the affection confirmed its non-tuberculous character.

102. **Palpation of the Heart Outlines.**—Bassi urges that greater reliance should be placed on the palpation findings in the diagnosis of heart disease. He has found palpation a particularly valuable means of controlling percussion findings. The heart action in children is so vigorous that palpation gives very significant results in their case. He adds two diagrams to illustrate the findings in severe cases of organic mitral defect. The heart area determined by palpation coincides with the area of relative dullness in case of long established mitral defects, while it coincides with the area of absolute dullness in recent cases. The heart can not be outlined by palpation in non-febrile adults free from heart affections.

Russkii Vratch, St. Petersburg.

Last indexed pages 537 and 851.

104 (II, No. 43.) O endothellom pleuri i eya histogeneseye. A. I. Buttzeva. (Commenced in No. 42.)
105 Differentiation of Cirrhosis of Liver and Angiocholitis. G. I. Bolintzeff.—Zheltzie tzirrosi i angiokholiti. Otzyvenka ikh priznakov v chirurgitcheskom otnoshenii.
106 Case of Ovarian Pregnancy. G. I. Olekhno.—Slutchai vnyematotchnoi yaitchnikovoi beremennosti.
107 Preventive Legislation. L. Y. Jacobsohn.—Kakimi myerami slyeduet borotsya a rasprostranenyem venereticheskikh bolyezni sredi utchastchikhsya?

Books Received.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE SUPPRESSION OF TUBERCULOSIS. Together with Observations Concerning Phthisiogenesis in Man and Animals and Suggestions Concerning the Hygiene of Cow Stables and the Production of Milk for Infant Feeding, with Special Reference to Tuberculosis. By Prof. E. von Behring, University of Marburg. Authorized Translation by Charles Boldman, M.D. First Edition. First Thousand. Cloth. Pp. 85. Price, $1.00. New York: John Wiley & Sons. London: Chapman & Hall, Limited. 1904.

FOOD INSPECTION AND ANALYSIS, for the Use of Public Analysts, Health Officers, Sanitary Chemists and Food Economists. By Albert E. Leach, B.Sc., Analyst of the Massachusetts State Board of Health. First Edition. First Thousand. Cloth. Pp. 787. With 120 Figures and 40 Full-page Half-tones. Price, $7.50. New York: John Wiley & Sons. London: Chapman & Hall, Limited. 1904.

A TREATISE ON OBSTETRICS. For Students and Practitioners. By Edward P. Davis, A.M., M.D., Professor of Obstetrics in Jefferson Medical College. New (2d) Edition. Thoroughly Revised and Much Enlarged. With 274 Engravings and 39 Full-page Plates in Colors and Monochrome. Cloth. Pp. 800. Price, $5.00 net. Philadelphia: Lea Bros. & Co. 1904.

A TEXT-BOOK OF PHYSIOLOGICAL CHEMISTRY. For Students and Practitioners of Medicine. By Charles E. Simon, M.D., late Resident Physician Johns Hopkins Hospital. New (2d) Edition. Revised and Enlarged. Cloth. Pp. 500. Price, $3.25 net. Philadelphia and New York: Lea Bros. & Co.

THIRTY-EIGHTH ANNUAL REPORT OF THE COLUMBIA HOSPITAL FOR WOMEN AND LYING-IN ASYLUM for the Fiscal Year Ending June 30, 1904, Washington, D. C. Paper. Pp. 35. Washington, D. C.: Government Printing Office. 1904.

SEVENTEENTH ANNUAL REPORT OF THE SUPERINTENDENT OF THE ST. LAWRENCE STATE HOSPITAL to the State Commission in Lunacy. For the Year Ending Sept. 30, 1903. Paper. Pp. 52. Albany: J. B. Lyon Company. 1904.

THIRTIETH ANNUAL REPORT OF THE SECRETARY OF THE STATE BOARD OF HEALTH OF THE STATE OF MICHIGAN for the Fiscal Year Ending June 30, 1902. Cloth. Pp. 254. Lansing Mich.: Robert Smith Printing Co. 1903.

TRANSACTIONS OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS. Vol. XVI. For the Year 1903. Cloth. Pp. 485. New York: Rooney & Otten Printing Co. 1904.

FIFTEENTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF FLORIDA, Jacksonville, Fla., Feb. 9, 1904. Paper. Pp. 203. Jacksonville: The Drew Press.

OM FRISENS BEHANDLING PAA SANATORIER. Af Klaus Hanssen, Overlæge ved Bergens Sygehus. Paper. Pp. 40. Bergen: John Griegs Bogtrykkeri. 1904.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK, for the Year 1904. Cloth. Pp. 503. Published by the Society. 1904.

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